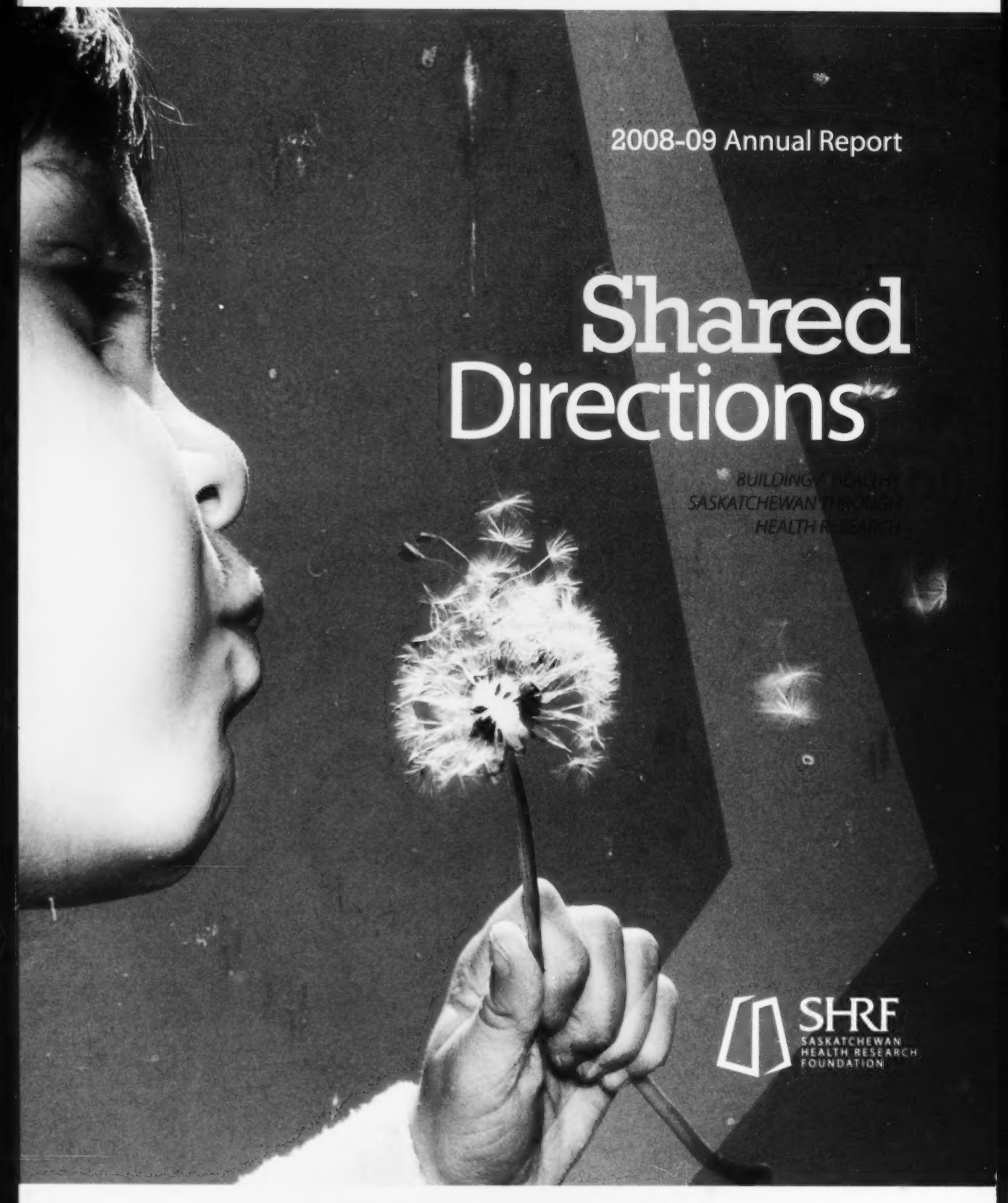
2008-09 Annual Report
Shared Directions
BUILDING A HEALTHY SASKATCHEWAN THROUGH HEALTH RESEARCH
SHRF
SASKATCHEWAN HEALTH RESEARCH FOUNDATION

VISION

Building a healthy Saskatchewan through health research

MISSION

The Saskatchewan Health Research Foundation contributes to a healthy province by funding and promoting excellence in health research, promoting the benefits of health research, and enhancing capacity, including securing funds to support excellent research and researchers.

VALUES

We believe health research:

- is the ethical search for truth, knowledge, and understanding about human health;
- is an investment that leads to benefits for all Saskatchewan residents in many areas including health, education and the economy;
- includes both basic and applied research; and
- encompasses many dimensions including biomedical science, clinical investigation, health services and systems research, and research into the determinants of population health.

We are committed to good governance, including:

- good stewardship for the resources entrusted to us; and
- the highest standards of public accountability.

We will maintain the highest standards of professional conduct, including…

- integrity and honesty;
- respect for diverse perspectives and approaches; and
- clear, open, honest and timely communication.

We will work co-operatively and collaboratively with others to:

- achieve mutual goals related to advancing health research in Saskatchewan; and
- ensure research findings are shared and used as widely as possible.

We strive for excellence and innovation in all our endeavours

Mandate

As defined in *The Saskatchewan Health Research Foundation Act* (2002):

1) Seek and receive funding from government and non-government sources for the advancement of research.

2) Encourage and facilitate research in health sciences; the health-related social sciences and other health-related fields of study.

3) Assist the Minister of Health to develop a provincial strategy for research into matters associated with the health sciences, the health-related social sciences and other health-related fields of study.

4) Provide funding to persons and agencies who are conducting or proposing to conduct research projects that are consistent with the provincial strategy.

5) Disseminate information to members of health-related professions and to the public respecting the objects of the Foundation, the research that the Foundation supports, the results of that research and conclusions drawn from that research.

MESSAGE TO THE MINISTER

The Honourable Don McMorris
Minister of Health
Legislative Assembly
Regina, SK S4S 0B3

Dear Mr. McMorris,

I am pleased to submit for your consideration the annual report of the Saskatchewan Health Research Foundation for the fiscal period April 1, 2008 to March 31, 2009.

Respectfully submitted,

Gregory P. Marchildon, PhD
Board Chair

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< **How does obesity affect the health of our joints?** SHRF New Investigator grant recipient Dr. Joel Lanovaz (left, in green shirt) at the University of Saskatchewan with team members Mike Smith and Valerie Wellens.

Working together toward a shared vision

For an enterprise as complex as health research, it's essential to consult widely, gathering advice and direction from the best and brightest available – among our researchers, in government, and from our communities.

The Saskatchewan Research Chairs program, launched this past year, is a case in point. Not only does it offer matching funding, the program invites partners to help shape the mandate of each Chair to focus on desired areas of importance. This allows the Foundation to identify strong partners to help build capacity, particularly in the priority areas identified in the province's *Health Research Strategy*. It also multiplies knowledge translation efforts by adding our partners' resources to the Foundation's own to share research knowledge.

Past experience shows us that close collaboration with other players in the health research community is not only possible and desirable, but highly effective. For example, continuing partnerships with our province's universities has informed and guided such capacity-building initiatives as the Statistics Canada Research Data Centre (RDC).

Accessible by researchers from both major provincial universities, the RDC is considered essential infrastructure for quantitative inquiry, providing the high-quality data that is fundamental to health research in the social sciences. Saskatchewan was one of only two provinces to lack this resource until partners in the health research community, led by the University of Saskatchewan and supported by many agencies including the Foundation, secured this resource for our province.

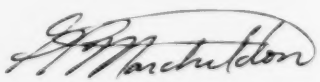
Our partners also inform our own funding programs. An example is our Research Group Development Grant program, which has been embraced by the health research community for providing the resources for researchers to pull together expertise from separate disciplines. These groups are effectively breaking down the "silos of specialization" at our universities which have isolated researchers in the past, helping them push into the frontiers of health research. Some examples include world-leading synchrotron-based medical imaging, exploration of cancer stem cells, and looking at the complexities of lifetime bone health using unique long-term Saskatchewan data sets.

Health research also provides invaluable information to guide public policy. This past year, we worked closely with our colleagues at the Saskatchewan Ministry of Health and with CIHR's Institute of Health Services and Policy Research to participate in CIHR's Evidence on Tap program.

This initiative, aimed at providing accessible and timely evidence to decision makers, begins with "Best Brains" consultations that put top researchers and senior policy makers in the same room for discussions on issues deemed high priority by the province. So far, we have participated in Best Brains consultations on patient-centred care, and access to health care in rural and remote Saskatchewan. More consultations are planned for the coming year.

Next year will be a year of transition for SHRF, as six of our board members, including myself, complete our terms. Some of these individuals have been on the board since SHRF's inception in 2003, and all have been valued and productive colleagues in steering the Foundation. You have my heartfelt thanks for your efforts and camaraderie over the years.

As I step out of my position as Chair, I welcome our new board members, well assured that the Foundation's guidance is in capable, professional hands. SHRF will continue to pursue its vision to help build a healthy Saskatchewan, based on the needs of our people and the unique opportunities of our research enterprise.

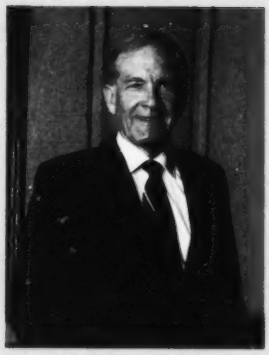


Gregory P. Marchildon, PhD
Board Chair

BOARD OF DIRECTORS

Greg Marchildon, Chair (5)
University of Regina

Murray Knuttila, Vice-Chair
University of Regina (5)



Terry Baker
Farmer, Denzil (2)
(appointed October 30/08)

Tony Baumgartner
Enterprise Saskatchewan (1)
(appointed October 30/08)

Louis Delbaere
University of Saskatchewan (5)

John Gordon
University of Saskatchewan (4)

Andrew Greenshaw
University of Alberta (2)
(appointed October 30/08)

Shanthi Johnson
University of Regina (2)
(appointed October 30/08)

Gordon McKay
University of Saskatchewan (1)
(appointed October 30/08)

Cory Neudorf
Saskatoon Health Region (4)

Pauline Rousseau
Saskatchewan Ministry of
Health (4)

Kevin Veitenheimer
Saskatchewan Ministry
of Advanced Education,
Employment, and Labour (2)
(appointed October 30/08)

* Figures in brackets indicate the number of meetings each SHRF board member attended in the 2008-09 fiscal year. There were a total of five meetings held.

Together, we're better

We look to many agencies and individuals to help us realize our vision of "Building a healthy Saskatchewan through health research."

On the home front, our key role is to encourage and facilitate health research because of its power to improve health and health care and to generate social and economic benefits. It's important to be able to show we're making a difference, that public investment in health research is achieving its purpose. We tackle this complex question with our partners across Canada.

On the national scene, we were one of many agencies that sponsored a Canadian Academy of Health Sciences study on better ways to measure return on investment in health research. Released in January, the study identifies impact indicators for different areas of health research (biomedical, clinical, health policy, and health determinants). The sponsors have begun working on implementation plans, a shared effort that will contribute to savings and synergies for everyone involved.

(l-r) **Alexa Briggs,** Funding Programs Manager; **D'lee Johnson,** Administrative Assistant; **June Bold,** CEO; **Patrick Odnokon,** Research Analyst; **Pamela Riffel,** Administrative Assistant; **Deborah Fortosky,** Director of Finance and Operations; **Michael Robin,** Communications Manager; **Lynn Nastiuk,** Administrative Assistant.

It's impossible to tackle the issue of impact without considering the effectiveness of the connections between research and the broader community – connections that lead to innovative practice, informed policy, and economic opportunities. A key question is: do we invest enough in people and processes that maximize our investment in research? *Health Research in Action*, our framework for knowledge translation, provides insights on this and guides our work with partners such as the Canadian Institutes of Health Research.

Input from our partners in the research community led to some program improvements this year. We enhanced our Research Fellowship Program to attract more top-quality candidates to the province and to encourage more Saskatchewan-based candidates to compete for national awards. After offering our Health Research Team and Research Group Development Grants for several years, we sought input about their effectiveness. Based on this advice we have reworked these programs for 2009-10 to provide a clearer path of support, from nascent groups to mature, highly successful teams focused on health issues and opportunities for innovation in Saskatchewan.

Internally, this was a year of change, with some staff turnover and the addition of in-house information technology support. We revamped our accounting system to make it more efficient and user-friendly and to ensure it fully meets our needs for financial planning and accountability.

In the coming year, we will again look to our partners in many ways. Strengthening clinical research is on our agenda, just as it is for many across the country. Improving access to health care data for research, surveillance and planning is another critical area that will require co-operation and collaboration. Our new Saskatchewan Research Chairs Program will also feature prominently in our work with university and community partners.

I invite you to take a few moments with this report to read about our top-notch researchers and their excellent work going on right here in Saskatchewan. We are proud of their leadership and achievements and are privileged to share a few of their stories with you.

June M. Bold, MSc
Chief Executive Officer

Saskatchewan's *Health Research Strategy*

A Vision to Strengthen Health Research for Saskatchewan People

The provincial *Health Research Strategy* is a 10-year vision to strengthen health research in Saskatchewan and ensure research leads to benefits for citizens. It was released by the Minister of Health in 2004 after province-wide consultations in the previous year.

Two key messages came to the fore from these consultations: the need to focus research resources and energies toward areas critical to the health and well being of Saskatchewan people; and the need to build upon our current strengths and comparative advantages in health research.

To these ends, the Strategy is organized into four major themes: advancing priority areas, applying what we learn, building capacity, and tracking progress and impact.

Under the first theme, five health research priority areas are identified:

a. Health needs of specific populations, particularly Aboriginal people and seniors;

b. Health systems and policy research, with emphasis on human resources; quality improvement; primary care, mental health and addictions; innovative delivery models; and rural and remote health service delivery;

c. Determinants of health status, including early childhood development and the prevention and underlying causes of chronic and lifestyle-related disease (particularly diabetes, obesity and smoking);

d. Public health, including infectious diseases, water safety and food safety; and

e. Synchrotron-based health research.

While the Strategy designates the Foundation as the lead agency for implementation, its success depends on collaboration and commitment among many agencies and individuals in Saskatchewan. Working with our many partners, we have made considerable progress, as you will read throughout this report. The table below highlights our progress on the Strategy during 2008-09 and outlines plans for 2009-10.

	Strategic Themes	Looking back at 2008-09... Action Highlights	Looking ahead to 2009-10... Action Highlights
1	**Advance Saskatchewan's health research priority areas**	• Launched new Saskatchewan Research Chairs Program to build capacity with partners in priority areas • Allocated funding for health research priority areas - at least 50% in some programs and 100% in others • Partnered with CIHR's Institute of Health Services and Policy Research on matching grants in Saskatchewan targeting health services research	• With community partners, define and fund two chairs under the new Saskatchewan Research Chairs Program • Assess alignment of funding programs with the Strategy's health research priority areas • Partner on other grants and awards that advance strategic priority areas, as resources permit
2	**Foster the exchange and application of health research knowledge**	• Shared within and outside Saskatchewan our *Health Research in Action* framework (2007) for increasing knowledge translation (KT) capacity • Continued having researchers address knowledge translation in proposals and reports, as relevant to their field • Supported research-based conferences and workshops that focus on knowledge translation (Research Connections program) • Participated in CIHR's KT Funders Network and their Evidence on Tap Program (piloted in Saskatchewan)	• Encourage use of our *Health Research in Action* framework for planning and evaluating strategies to build capacity in knowledge translation • Continue emphasis on knowledge sharing in all existing and any new funding programs • Continue Research Connections program and explore other mechanisms for fostering knowledge translation • Continue working with CIHR and others to identify and implement best practices for building KT capacity
3	**Strengthen Saskatchewan's health research capacity**	• Supported the Sask-CIHR Regional Partnership Program (RPP) to build capacity and advance priority areas • Continued partnerships with the Universities of Saskatchewan and Regina to fund health research co-ordination initiatives and the Research Data Centre • Participated in provincial working groups on ethics review harmonization and on improved access to health information for research and evaluation • Supported key infrastructure initiatives: the Research Data Centre at the U of S and the Saskatchewan Directory of Health Researchers • Expanded Health Research Week and other activities showcasing health researchers and their work	• Continue support for the Sask-CIHR RPP to increase federally funded research capacity and activity in Saskatchewan • Continue support for health research co-ordination and other initiatives that enhance the health research environment in the province • Continue work with provincial partners for a more supportive research environment, both ongoing and possible new areas, such as clinical research capacity • Link the Saskatchewan Directory of Health Researchers to the National Directory of Health Researchers • Continue to expand Health Research Week and other activities that showcase Saskatchewan health research
4	**Implement the *Health Research Strategy* and track progress**	• Continued tracking outcomes and impact related to the Strategy, based on our Strategy evaluation framework • With many partners, received results of the Canadian Academy of Health Sciences' (CAHS) study on the returns on investment (ROI) in health research •Shared results of Research Fellowship Program evaluation, which led to several program enhancements • Requested additional resources from government to implement the Strategy's 10-year plan	• Co-ordinate the five-year evaluation of the Strategy, working with the Ministry of Health • With partners, plan implementation of the CAHS ROI study recommendations, defining responsibilities and assessing the availability of required data • Implement recommended changes from review of Health Research Team and Research Group Development Grant Programs • Pursue additional resources and partnerships to advance our mandate and the Strategy's vision for strengthening health research in Saskatchewan

Funding Programs

Supporting Saskatchewan Health Researchers

Our funding programs are important tools to help us fulfill various aspects of our mandate and to contribute to the themes outlined in the provincial *Health Research Strategy*. These include advancing health research in strategic priority areas; sharing and using health research (knowledge translation); and building health research capacity.

SHRF funding programs have a strong developmental focus, helping Saskatchewan researchers enter the highly competitive national scene and contributing to an overall supportive health research environment in the province. We continue to encourage and support a broad range of human health research including basic biomedical science, clinical research, health services and system research, as well as research into the cultural, social and environmental determinants of population health.

Our Board approved $2-million for new research grants and fellowships in 2008-09. This section:

- provides an overview of all grants and awards awarded (see Table 1);
- describes funding programs offered in this fiscal year; and
- lists recipients for each of the programs.

Further information about our programs, policies, eligibility criteria and submission requirements for all programs is available in our *SHRF Awards Guide*, published annually and posted at www.shrf.ca. Our website also carries competition results and details about each grant, including funding amounts and easy-to-read project summaries.

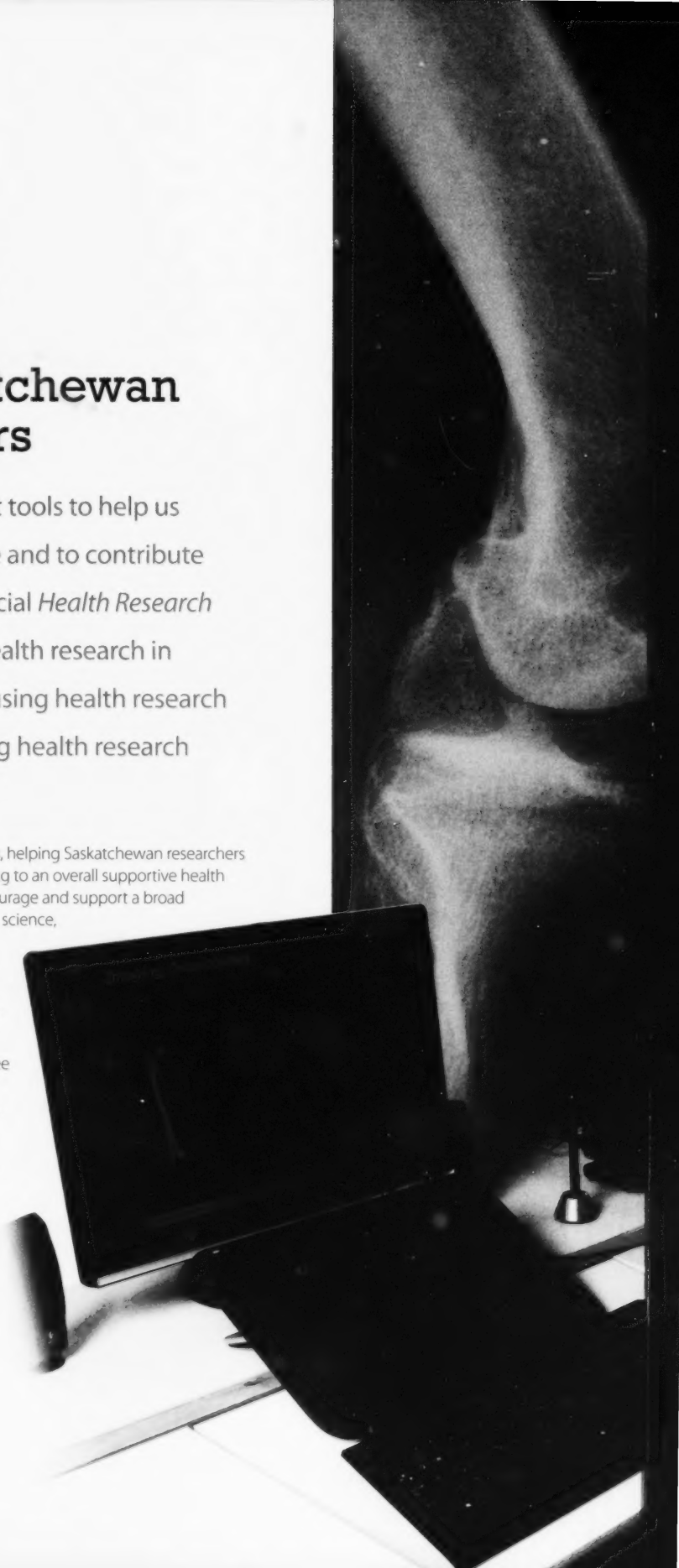
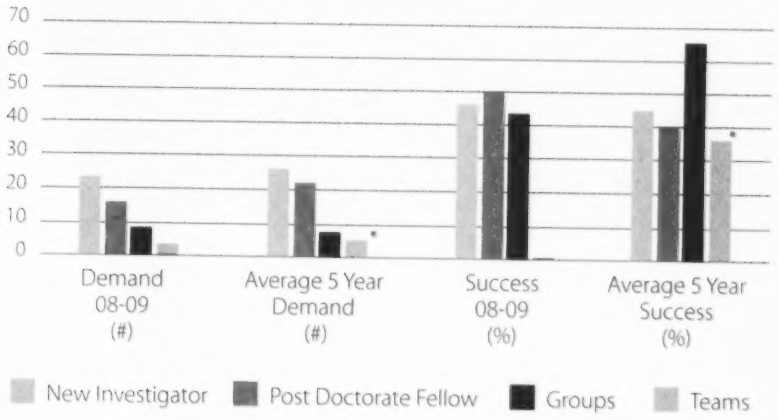


Table 1: Applications Received, Recommended, and Awarded 2008-09

SHRF Funding Program	Received		Recommended		Awarded*		
	No.	$	No.	$	No.	Term	$
Postdoctoral Research Fellowships	16	1,440,000	15	1,350,000	8	2 yrs	720,000
New Investigator Establishment Grants	22	1,751,851	18	1,436,851	10	2 yrs	797,780
New Investigator Equipment Grants	17	503,242	14	413,622	7	6 mos	210,000
Research Connections Grants	14	95,650	13	61,000	13	n/a	61,000
Research Group Development Grants	9	450,000	4	200,000	4	2 yrs	200,000
Health Research Team Grants							
Letter of Intent	3	n/a	1	n/a	1	n/a	n/a
Full Application	1	2,488,784	0	0	0	0	0
TOTAL		**6,729,527**		**3,461,473**			**1,988,780**

* Awarded amounts are for the full term of the grant (see also Grant Selection Process section).

Success Rates



* Team Averages are over 3 years

Illuminating osteoporosis with synchrotron light: Dr. David Cooper, University of Saskatchewan

New Investigator Establishment and Equipment Grants

These grants supply up to $40,000/year for two years to new university faculty in Saskatchewan to help them establish health research programs and achieve the productivity necessary to obtain longer term and more substantial funding from national and other external agencies. Recipients may also apply for New Investigator Equipment grants of up to $30,000 over a period of six months to acquire major equipment essential to their research that is not available through other means.

SHRF has an agreement with the Canadian Nurses Foundation (CNF) until September 2009 for the Nursing Care Partnership (NCP), which supports applied research that shapes nursing care and clinical practice and develops research capacity. SHRF selects quality applications from the New Investigator Establishment Grant competition which meet NCP requirements for funding consideration in CNF's relevance review. This partnership adds funding to SHRF's New Investigator Establishment competition.

Exploring the origins of schizophrenia

Research Spotlight
JOHN HOWLAND
NEW INVESTIGATOR AND EQUIPMENT

It typically begins in the late teens or early 20s. Hallucinations, delusions, social withdrawal: the hallmarks of schizophrenia. But where does this devastating mental disorder come from?

University of Saskatchewan researcher Dr. John Howland thinks the answer may lie in our earliest beginnings, in the womb. He cites recent studies of women who are pregnant during winter and spring, when infections such as influenza are more common.

"Babies exposed to infection in the womb are significantly more likely to develop schizophrenia," he says.

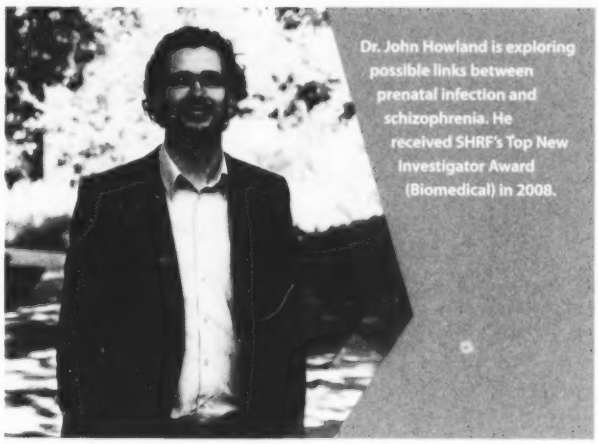
He hastens to reassure parents that having the flu during pregnancy is not a guarantee of future schizophrenia – only an increased risk factor. And it is this increased risk that so intrigues Howland.

"Your mother gets an infection while you're in the womb and difficulties arise with various aspects of your mental functioning 20 years later – how does that work?"

Howland is using rats as a model to try tease out some of the answers. Two groups of pregnant rats will be used: one as a control, while the other is injected with a synthetic molecule that mimics a viral infection and causes the immune system to respond.

Behavioural testing of the rats' offspring, similar to that used on patients with schizophrenia, will help determine the effects of the mothers' prenatal infections. The testing will also help determine which drugs might help restore behaviours affected by the disorder.

Howland hopes his work will lend insight to better treatment options for schizophrenia. Current drugs work well in suppressing psychosis, but not in helping reduce a number of other symptoms of the disorder, such as depression, social withdrawal, impaired memory, and decision-making ability. Ultimately, he hopes to shed light on the causes of the disorder to see if there is some way to help prevent it.



Dr. John Howland is exploring possible links between prenatal infection and schizophrenia. He received SHRF's Top New Investigator Award (Biomedical) in 2008.

"If we know the moms already have infections – how about if we treated them to prevent this beforehand?" he says. "Is there something we can do before symptoms are expressed?"

Born and raised on a farm near Lumsden, Howland earned a bachelor's degree in psychology at the University of Saskatchewan before spending nine years completing a master's degree, PhD, and postdoctoral work at the University of British Columbia. Opportunity and the research environment at the University of Saskatchewan brought him home.

"The U of S has everything a life sciences researcher needs," he says, citing Colleges of Medicine, Veterinary Medicine, and Arts and Science, the Vaccine and Infectious Disease Organization, and several new multi-million-dollar facilities currently under construction.

"What really sold me was the Academic Health Sciences Centre," he says. "It demonstrates a clear long-term commitment to health-related research from the U of S and provincial government."

Howland's SHRF New Investigator Establishment Grant is allowing him to put together his research team of grad and undergraduate students, while his New Investigator Equipment Grant is providing the tools for the work itself. He is also an active member of the SHRF-funded Neural Systems and Plasticity Research Group, which pulls together expertise from across campus.

Moving in the right direction

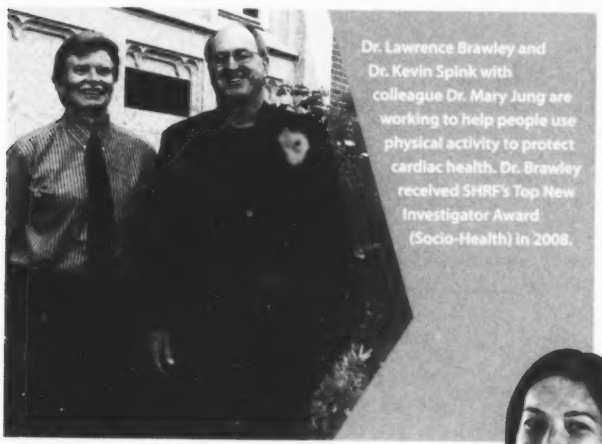
Anyone who has experienced a major heart problem knows it can be hard to change their lifestyle to improve and maintain health.

Cardiac rehabilitation programs offer exercise, nutrition and other tools to help lower the risk of future cardiac problems. But what happens after the program ends? For instance, the Saskatoon Health Region's program runs for only three months.

Research Spotlight
LARRY BRAWLEY
NEW INVESTIGATOR

Preliminary research led by Dr. Lawrence Brawley shows more can be done to improve cardiac patients' health through increasing physical activity while in the program and helping keep up a routine afterwards.

Brawley, a professor at the University of Saskatchewan's College of Kinesiology, together with colleagues Dr. Kevin Spink and Dr. Mary Jung, are conducting two studies aimed at adults 60 to 80 years old who are maintaining their physical activity and have reduced their cardiac risk. Why focus on these people?



Dr. Lawrence Brawley and Dr. Kevin Spink with colleague Dr. Mary Jung are working to help people use physical activity to protect cardiac health. Dr. Brawley received SHRF's Top New Investigator Award (Socio-Health) in 2008.

"Our goal is to raise the bar," he explains. "While they may be doing a good job of maintaining activity within the program, we are also trying to get them to do more, so they approach 30 minutes of moderate activity most days."

In one study, motivating participants to increase physical activity and promoting the benefits of doing so are the main objectives.

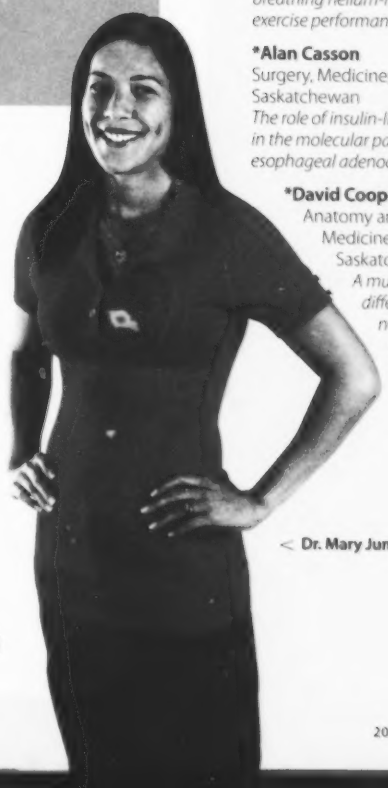
"We're dwelling on positive outcomes that can be achieved in the here and now, because they are more motivating. This might include having more energy to spend time with grandchildren without being exhausted, and enjoying different types of physical activities in and around the community. We hope after hearing this, participants may be more interested in trying more activities."

For those who are already sold on the idea but are unsure how to do it, a second study focuses on teaching cardiac patients how to schedule, plan, and add physical activities to supplement what they do in the program.

"We try to give these people the skills and the confidence to keep going and if something unexpected happens, and they lapse, to get started again," Brawley says.

Results from both groups will be compared to control groups not receiving the same information.

Brawley believes these studies have the real potential to help him gain funding for larger scale research studies, which in turn could provide techniques that could be adapted into cardiac rehabilitation programs here and elsewhere—improving short-term and long-term outcomes for people with heart problems.



< Dr. Mary Jung

NEW INVESTIGATOR ESTABLISHMENT GRANTS

Asterisk (*) indicates accompanying Equipment Grant

Lawrence Brawley
Kinesiology, University of Saskatchewan
Promoting exercise adherence for older adults in maintenance cardiac rehabilitation: Intervention feasibility studies

***Scott Butcher**
Physical Therapy, Medicine, University of Saskatchewan
High-intensity exercise and ventilatory limitations in chronic obstructive pulmonary disease (COPD): Effect of interval exercise and breathing helium-hyperoxia on acute exercise performance

***Alan Casson**
Surgery, Medicine, University of Saskatchewan
The role of insulin-like growth factors in the molecular pathogenesis of esophageal adenocarcinoma

***David Cooper**
Anatomy and Cell Biology, Medicine, University of Saskatchewan
A multi-level analysis of differences between normal and osteoporotic bone

***John Howland**
Psychology, Arts and Science, University of Saskatchewan
Cognitive and neurophysiological effects of prenatal infection in rats: Implications of the neurodevelopmental hypothesis of schizophrenia

Shanthi Johnson
Kinesiology and Health Studies, University of Regina
Osteoporosis care gap among the elderly: From screening to evidence-based management

***Joel Lanovaz**
Kinesiology, University of Saskatchewan
Activities of daily living: How does obesity affect joint loads in middle-aged women?

Vivian Ramsden
Family Medicine, Medicine, University of Saskatchewan
Primary Health Care: Chronic disease prevention and management resulting in pathways for wellness

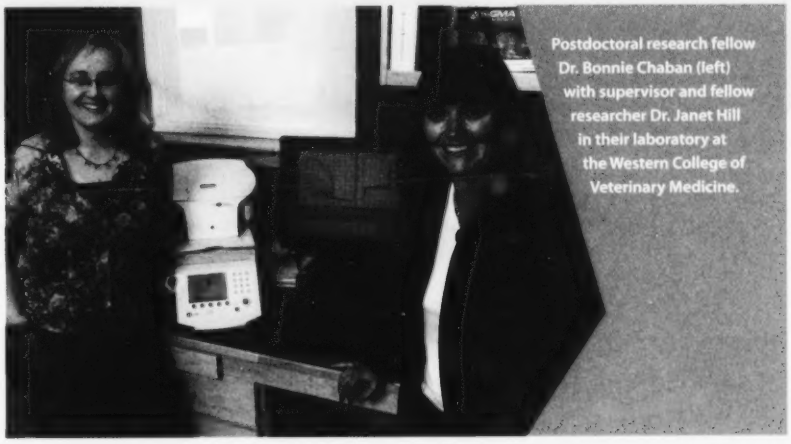
***Greg Sawicki**
Pharmacology, Medicine, University of Saskatchewan
Ischemia-reperfusion injury triggers post-translational modifications of myocardial matrix metalloproteinase-2

***Scot Stone**
Biochemistry, Medicine, University of Saskatchewan
Identification of proteins that interact with diacylglycerol acyltransferase (DGAT)

Note:
Summaries of the research projects of all grant recipients are available online at **www.shrf.ca.**

Research Fellowships

Postdoctoral Research Fellowships offer full-time training opportunities for high-quality candidates in health-related fields. Fellows are supervised by experienced, active researchers to further develop their skills and equip themselves for a career in health research. The program offers a salary stipend of $40,000 per year and a research allowance of $5,000 per year for up to two years.



Postdoctoral research fellow Dr. Bonnie Chaban (left) with supervisor and fellow researcher Dr. Janet Hill in their laboratory at the Western College of Veterinary Medicine.

Poisoned by your pet?

It was a great night out until the nausea hit. Then came the vomiting, the cramps, the diarrhea.

"It must have been something I ate," you think. But don't blame the restaurant just yet: it may be your pet.

Research Spotlight
BONNIE CHABAN
POSTDOCTORAL RESEARCH FELLOWSHIP

According to postdoctoral research fellow Dr. Bonnie Chaban, the cause of your suffering is likely *Campylobacter*, a type of bacteria found in the gut in many food animals and pets and one of the most common causes of food-borne illness.

Testing for the culprit involves time-consuming culturing of bacteria, and since *Campylobacter* is difficult to grow, tests are often inconclusive. Also, while food safety protocols aggressively monitor for a few kinds of *Campylobacter*, little is done to test for those species that may be more common in pets.

"It's something that hasn't really been looked at," Chaban says. "We think its prevalence is really underestimated."

A native of Yorkton, Chaban was following a career path away from Saskatchewan to Ontario and then to postdoctoral work in Hawaii. She had been searching for opportunities back in her home province when she came across the lab of Dr. Janet Hill at the Western College of Veterinary Medicine at the University of Saskatchewan. Hill's lab had an opening for another researcher. Chaban applied for and was awarded a Research Fellowship from SHRF.

"That was the deciding factor. The fellowship was the reason I was able to come back from the U.S. and come back to Saskatchewan specifically."

Now working under Hill's supervision, Chaban has finished designing and validating separate tests for all known species of *Campylobacter* that began in the Hill lab and is now moving these tests into a multiplex version that can be used to look for all species at once.

The tool promises to be invaluable to both veterinarians and doctors. While a *Campylobacter* infection is certainly unpleasant for a North American, in developing countries it can be lethal. Children often die of such diarrhea-inducing illnesses.

"In developing countries, they're looking for cheap ways to test for *Campylobacter* directly," she says. "The hope is to make this new test cheaper, faster, and much more reliable than culture-based technologies."

Chaban is also working to identify new species of *Campylobacter* and their effect in pets and people, both to improve diagnostic tests and to better understand the bacteria.

"What's interesting in pets and companion animals is it looks like *Campylobacter* exists in the gut naturally," Chaban says. "It's part of what keeps cats and dogs healthy. In humans, it makes you sick."

^ **Dr. Bonnie Chaban receives SHRF's Top Postdoctoral Fellowship Award (Biomedical) at SHRF's Santé! Awards Dinner in 2008. Saskatchewan Minister of Advanced Education, Employment and Labour Rob Norris was on hand to present the awards with SHRF Chair Greg Marchildon (far left) and SHRF CEO June Bold.**

Community-driven policy

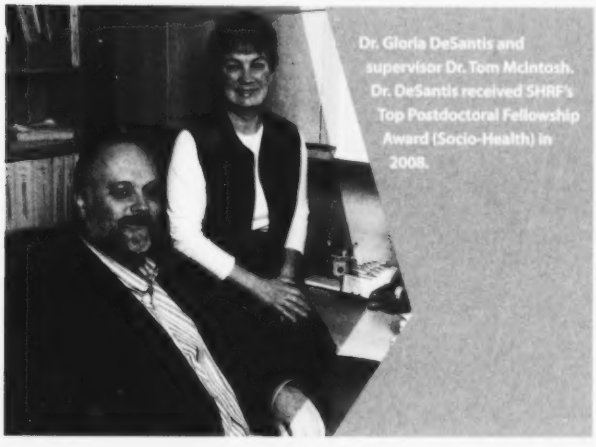
They're called marginalized communities.

People living in severe poverty. Women suffering the trauma of partner violence. Recent immigrants struggling to understand a new language and find a job. People fighting discrimination because they have a disability.

Research Spotlight
GLORIA DESANTIS – POSTDOCTORAL RESEARCH FELLOWSHIP

University of Regina researcher Dr. Gloria DeSantis discovered something interesting about marginalized communities and the non-profit groups working with them.

When these communities organize to push for changes to government policy the experience changes individuals, organizations and communities. These efforts often involve people coming together through their community-based organizations (CBOs).



Dr. Gloria DeSantis and supervisor Dr. Tom McIntosh. Dr. DeSantis received SHRF's Top Postdoctoral Fellowship Award (Socio-Health) in 2008.

"They might not be successful in the policy initiative," DeSantis says. "But at the same time, all kinds of neat things start to happen when people come together."

"Advocacy becomes a process of civic engagement, in other words. People get engaged in conversations about things around them, start helping one another, learn new things, and often go on to solve other community issues," she explains.

DeSantis, who took SHRF's Top Postdoctoral Research Fellow Award (Socio-Health) last year, spoke with activist volunteers, people on social assistance or living with disabilities, all the way up to executive directors of major groups including mental health organizations, women's shelters and food banks. In all, she conducted 56 in-depth interviews in 2006-07.

"When I started off, the notion of advocacy was my focus. But what I was further pushing to answer was: 'how do these organizations work with their communities?'"

So she asked different questions. When people come together to advocate, what does it look like? What are the processes? Who stays committed and who drops out? Do people learn anything in the process, and do their behaviours change? The questions were asked from a "population health" perspective, says DeSantis, which recognizes the various social, economic and physical environmental factors that contribute to health.

DeSantis notes that studying the role of CBOs is timely because of the interest by funders, including governments, about what such groups do.

"There is actually growing importance on measuring the impacts of the social service CBO sector. What do food banks really do? What do family counselling agencies achieve? A lot of funders and governments are asking these questions, so I was very interested in measuring the impacts of advocacy work in the sector."

Her postdoctoral research delves deeper into these civic engagement issues including an exploration of government policy making processes and structures.

POSTDOCTORAL RESEARCH FELLOWSHIPS

Khawaja Ahmed
Oncology, Medicine, University of Saskatchewan
(Supervisor: Jim Xiang)
HER-2/neu-targeted CD4 + T cell vaccine combating breast cancer in transgenic mouse models with self immune tolerance

Bonnie Chaban
Veterinary Microbiology, Veterinary Medicine, University of Saskatchewan
(Supervisor: Janet Hill)
Diagnostic tools for understanding Campylobacter *ecology in people and pets*

Gloria DeSantis
Political Science, Arts, University of Regina
(Supervisor: Tom McIntosh)
Health and social justice: Voluntary social service agencies and marginalized groups working toward the creation of healther communities through policy participation

Xinya Lu
Vaccine and Infectious Disease Organization, University of Saskatchewan (Supervisor: Yan Zhou)
The role of cellular signaling pathways in modulating chemokine IP-10/CXCL10 production by influenza A virus infection

Sheryl Maher
Vaccine and Infectious Disease Organization, University of Saskatchewan (Supervisor: Sylvia van Drunen Littel-van den Hurk)*Developing an RSV vaccine: Investigating possible adjuvants*

Rhona Shaw
Sociology, Arts and Science, University of Saskatchewan
(Supervisor: Roanne Thomas-MacLean)
Breast cancer follow-up: Clinicians' preference for knowledge translation

Karin van Straaten
Chemistry, Arts and Science, University of Saskatchewan
(Supervisor: David Sanders)
Structural investigations of eukaryotic UDP-galactopyranose mutases

Christiane Wilzeck
Psychology, Arts and Science, University of Saskatchewan
(Supervisor: Debbie Kelly)
Lateralizaton of spatial memory: A focus on age and sex-related differences across environments

Note:
Summaries of the research projects of all Fellows are available online at **www.shrf.ca.**

Research Connections Grants

This program provides up to $10,000 per event in matching funds to support conferences, workshops, research days and similar events that are organized and held in Saskatchewan. It is intended to promote advancement and exchange of new health research knowledge, encourage linkages among multiple stakeholders, help address knowledge gaps in areas of particular importance to the province, and nurture development of the next generation of researchers.

16th Annual Life and Health Sciences Research Day

In March 2009, the University of Saskatchewan hosted its most successful Life and Health Services Research Day to date, with more than 160 scientific posters presented.

The presentations allow graduate students and other research trainees to share their findings with the U of S research community and to give the public a sense of new research going on in life and health sciences.

Research Spotlight
RESEARCH CONNECTIONS

Funded in part by a SHRF Research Connections grant, the Research Day is presented by the U of S College of Medicine. The event draws participation from graduate students, medical residents, and post-doctoral fellows from across the university.

Fields of study are diverse, from food science, pharmacy, and nutrition to kinesiology, medicine, dentistry, nursing, veterinary medicine, and toxicology.

Dr. Bill Thomlinson's keynote address at the event explored the biomedical applications of synchrotron light and in particular the growth and outlook for this emerging field of science. Originally designed as a tool for basic and applied science, synchrotron light is being harnessed to better detect and treat diseases such as breast cancer, lung disease and osteoporosis.

Thomlinson, currently Special Advisor to the U of S Vice-President Research, is former Executive Director of the nation's only synchrotron, the Canadian Light Source at the U of S.

SHRF CEO June Bold (right) presents Tara Smith with first prize in the "Genetics – Animal" category at the 16th Annual Life and Health Sciences Research Day at the University of Saskatchewan in March 2009. The event, sponsored in part by a SHRF Research Connections grant, was the most successful to date, with more than 160 research posters presented.

Enriching Our Worlds: Meeting of the Minds on Workforce Migration

Research Spotlight
RESEARCH CONNECTIONS

In November 2008, the U of S College of Nursing held *Enriching Our Worlds: Meeting of the Minds on Workforce Migration.* The workshop aimed to address issues arising from the decision to recruit 400 nurses from the Philippines to help address the nursing shortage in Saskatchewan. About 35 people attended the informal event, including several Filipino nurses.

The goal of the workshop was to establish a framework to clearly set out principles for a mutually beneficial exchange of health care workers between Saskatchewan and the Philippines.

Discussions centred on developing ethical recruiting practices, leadership exchange programs, and an international workplace migration database.

RESEARCH CONNECTIONS GRANTS

Sylvia Abonyi
Saskatchewan Population Health and Evaluation Research Unit, University of Saskatchewan
Aboriginal Experiences in Aging Symposium: Setting Research and Policy Priorities

Lalita Bharadwaj
Nursing, University of Saskatchewan
Water and Health in Indigenous Communities: A Research Workshop

Dongyan Blachford and Joseph Hebert
Graduate Studies and Research, University of Regina
4th Annual U of R Graduate and Undergraduate Research Conference

Lorna Butler
Nursing, University of Saskatchewan
Enriching Our Worlds: Meeting of the Minds on Workforce Migration

Philip Chilibeck and Jonathan Farthing
Kinesiology, University of Saskatchewan
2nd Annual Exercise Physiologists of Western Canada

Mary Hampton and Fiona Douglas
Luther College, University of Regina
Resolve Research Day 2009 - Healing from Violence and Abuse

Edward Krol
Pharmacy and Nutrition, University of Saskatchewan
Western Canadian Medicinal Chemistry Workshop

Tom McIntosh
Saskatchewan Population Health and Evaluation Research Unit, University of Regina
New Directions in Population Health Research: Linking Theory, Ethics and Practice

Don Ratcliffe-Smith
Kinesiology, University of Saskatchewan
2008 in motion Manulife National Physical Activity Institute

Donna Rennie
Nursing, University of Saskatchewan
Mini Symposium on Rural Nursing

Alan Rosenberg
Pediatrics, Medicine, University of Saskatchewan
CAPRI Research Workshop and Future Directions Symposium

Roanne Thomas-MacLean
Sociology, Arts and Science, University of Saskatchewan
Innovations in Qualitative Research Conference

Jim Thornhill
Medicine, University of Saskatchewan
16th Annual Life & Health Sciences Research Day

Note:
Further information on all grant recipients is available online at **www.shrf.ca.**

Research Group Development Grants

This program provides up to $25,000 per year in matching funds for up to two years, renewable once. It supports formation and early development of health research groups with the potential to evolve into highly productive and sustainable teams capable of securing ongoing competitive funding. Group leaders' home universities support development of these promising groups by providing matching funds.

GEMS: harnessing the Canadian Light Source synchrotron to shed light on genes in action. From left to right: Darrell Mousseau, Tomasz Wysokinski, Dean Chapman, Pat Krone, Valerie Verge, Karla Hopp, Ingrid Pickering, Bill Roesler, Sheldon Wiebe, Banafsheh Moazed, Phyllis Patterson, Elisabeth Schultke, Graham George, Helen Nichol

Synchrotron light reveals the secret life of genes

If the human body is a temple, it is one that is always under repair. Cells and systems are constantly rebuilt according to the "blueprint" contained in our genes. But things can go wrong, and the result may be cancer or other diseases.

Seeing this happen – in real time, inside a living organism – could be the key to solving some of medicine's greatest puzzles. GEMS, a multidisciplinary research group at the University of Saskatchewan, is working to open a window to these mysteries.

Research Spotlight
Gene Expression Mapping Using Synchrotron Light (GEMS)

If GEMS (Gene Expression Mapping using Synchrotron Light) is successful, its techniques could help other researchers understand how cancer cells spread, see how the body tries to heal a spinal cord injury, or watch the action of therapeutic drugs.

"Our hope is to bring a new way of looking at gene expression in living systems," says Dr. Dean Chapman, the U of S professor of cell biology who founded GEMS in 2004.

Seeing gene expression in living plants or animals is difficult because the process happens at the picomolar (trillionth) level, concentrations too small to see with current techniques.

To address the problem, the GEMS researchers first make gene expressions more visible by causing them to accumulate iodine, says Bill Roesler, a U of S professor of biochemistry and GEMS team leader.

"What we're doing is taking a gene that's normally expressed in the thyroid, that helps it accumulate iodine, and expressing that gene or 'loading' it into other cells, such as skin cancer cells," he says.

"So before we image an animal that has these cancer cells, we give them a big injection of iodine. As the tumour grows and spreads, the cells will be able to accumulate iodine which should allow us to visualize the tumour. Preliminary evidence suggests this can be achieved."

The second part of the solution is the imaging technology. GEMS uses the Canadian Light Source (CLS) synchrotron at the U of S, which provides more powerful capabilities than any other technology.

So far, the group has conducted experiments using the Hard X-ray Micro-Analysis (HXMA) beamline. While this let the research move forward, HXMA was never intended to be an imaging tool and the results were less than perfect.

Chapman says results will be better once the GEMS team starts using the new BioMedical Imaging and Therapy (BMIT) facility at the CLS in the summer of 2009. The two BMIT beamlines – designed with biomedical imaging in mind – should be ideally suited for the techniques the GEMS group is developing.

The GEMS work has been incredibly challenging from a technical standpoint. The group has already published five research papers on developing the technology involved.

"In the scientific world, the synchrotron world, people are astounded when they hear of this idea and what we're doing," Chapman says. "The fact that we're doing it in Saskatoon – I'd say there's a bit of local pride in this. It just shows what we can do with the resources here."

Banking On Your Bones

Building strong bones is much like financial planning: you must invest enough when you're young to make sure you enjoy a strong position later in life.

"There's only a small window of opportunity to build bones," explains Dr. Adam Baxter-Jones. "After 18 in girls and 20 in boys, you can't lay any more bone down – and by 30 years of age you start losing bone."

Research Spotlight
BONE AND JOINT IMAGING GROUP (BIG)

Baxter-Jones, a professor at the University of Saskatchewan College of Kinesiology, leads the Bone and Joint Imaging Group (BIG). One of their aims is to determine how "investments" – combinations of environment, exercise, and diet – affect bone health later in life.

Studies conducted by Don Bailey and colleagues in Saskatoon from 1963 to 1973 and another that began in 1991 are the basis for Baxter-Jones' research. Each followed school children, measuring physical activity and other lifestyle areas such as diet. Baxter-Jones continues work on the study, which was a major factor in his moving here from the U.K. nine years ago. Only a few similar studies have been conducted anywhere else.

Baxter-Jones says measuring bones throughout childhood, with follow-ups in later years, gives researchers hard data that can shed light on the causes of poor bone health and its consequences. This can include diseases such as osteoporosis and difficult to manage conditions such as arthritis.

SHRF funding for BIG will allow Baxter-Jones and about 20 U of S colleagues from applied health sciences, medical imaging and other fields to share findings and bring to bear a broad spectrum of expertise.

Work already underway includes studying bone fractures that occur in children before age 16, and using synchrotron light to reveal what is happening inside bone structure.

^ **The Bone and Joint Imaging (BIG) research group: back row, l to r: Petrus Gomes, Maria Copete, Karla Hoop, Sheldon Wiebe, David Cooper, Cathy Arnold, Angela Bowen, Jenny Basran, Saija Kontulainen. Second row l to r: Dean Chapman, Jon Farthing, Adam Baxter-Jones, J.D. Johnston, Bob Faulkner, Shawn Davidson, Hassanali Vatanparast. Front row l to r: Liz Harrison, Carol Rodgers, Corinna Nydegger, Soo Kim, Geoffrey Johnston**

"We each use a variety of different machines for imaging and with the synchrotron can examine bone development at the cellular level," Baxter-Jones says.

Engineers on the team will use biomechanics to look at the affect different types of force have on bones and muscles, while anthropologists will do comparisons to bones of our ancestors.

"People used to have stronger bones when we were hunter-gatherers. We're now out of synch with our genetic make-up. Our biggest problem is the technology surrounding our children: they are inactive and bone health is compromised, but they won't realize that until they're in their mid-50s."

Baxter-Jones believes this group's work could help stop that from happening.

"Collaboration is the name of the game. All factors: lifestyle, environment, physical activity and behaviour are important. We need to look at why people don't exercise and what the other barriers are, such as access to healthy food."

The group plans to bring in other leading edge experts both to enrich their research and to deliver presentations open to the public.

"We want to educate the public, in addition to identifying what areas of work still need to be done," he says.

RESEARCH GROUP DEVELOPMENT GRANTS

Adam Baxter-Jones
Kinesiology, University of Saskatchewan
Bone and Joint Imaging Group

Wendy Duggleby and Donna Goodridge
Nursing, University of Saskatchewan
Quality End of Life Care Research Group

John Gordon and Donald Cockcroft
Medicine, Medicine, University of Saskatchewan
Airways Research Group

Bill Roesler
Biochemistry, Arts and Science, University of Saskatchewan
GEMS (Gene Expression Mapping using Synchrotron Light)

Note:
Summaries on all Research Group Development grants are available online at **www.shrf.ca.**

Health Research Team Grants

This program provides major support of up to $500,000 per year for five years for teams of talented and experienced researchers who conduct high-quality work, contribute to knowledge translation, and build capacity at a level of productivity that would not be possible for individuals working on their own. The program supports teams comprising a range of talent, experience, and perspective for tackling complex health issues of importance to Saskatchewan.

No Health Research Team Grants were awarded in the 2008-09 year.

Matching Funding Programs

Partnerships Multiply Research Resources

The purpose of SHRF Matching Funding Programs is to collaborate with other funding agencies to support health research in Saskatchewan and increase national funds coming to the province. Any grants funded through matching programs must fit SHRF's mandate and objectives and must align with the goals of the provincial *Health Research Strategy*.

This section:

- provides an overview of all matching grants and awards awarded;
- summarizes matching programs in which SHRF participated in this fiscal year; and
- lists recipients for each of the programs.

Applied Health Services and Policy Research Chair

The Applied Chair program with the Canadian Institutes of Health Research-Institute of Health Services and Policy Research (CIHR-IHSPR) supports mid-career faculty who conduct high quality applied health services and policy research that is relevant to and informs health system managers, policy makers, and healthcare providers.

The award provides $185,000 per year for five years, of which $100,000 per year is a contribution to the award holder's salary and $85,000 per year is for research, education, mentoring and knowledge translation. The Foundation provides funds for successful Saskatchewan applicants on a 1:1 matching basis with CIHR.

SHRF conducts a required relevance review as part of the application process to CIHR, which does the peer review and ranks the applications. SHRF's agreement with CIHR covered one competition. CIHR does not expect to offer this program next year.

Improving dementia care for rural and remote seniors

Highlight
APPLIED HEALTH SERVICES AND POLICY RESEARCH CHAIR

Saskatchewan is aging – especially in its rural and remote communities – and no one is more aware of it than Dr. Debra Morgan, a researcher at the Canadian Centre for Health and Safety in Agriculture at the University of Saskatchewan.

For more than a decade, Morgan has been working on the problem of dementia diagnosis and care for rural and remote seniors. Most recently, she won a national competition for an Applied Health Services and Policy Research Chair for "Healthcare Delivery Across the Continuum for Rural and Remote Seniors with Dementia." One of only seven such chairs awarded across Canada, it provides $925,000 from SHRF and CIHR over five years for Morgan to pursue ways of improving diagnosis and treatment for dementia.

With an aging population comes an increase in the number of people with dementia. The problem is more acute in rural and remote communities because they have more seniors: 22 per cent in Saskatchewan's small towns and villages, compared to 15 per cent in its cities.

"We know there are a large number of people with dementia in the province — over 18,000 — and that's growing all the time as our population ages," she says.

Working with community members in the province's rural and remote areas, she and her team will work to develop best practices and share this knowledge throughout the province with other researchers and health service providers.

Morgan and her team have already established a reputation for innovation with the Rural and Remote Memory Clinic demonstration project at the U of S. The Memory Clinic solves the problem of dementia diagnosis with "one-stop shopping" for all specialists involved. Without it, diagnosis is an arduous affair for people from rural and remote communities, often requiring multiple trips to the city to visit various specialists.

In its five years of operation, the Memory Clinic has garnered rave reviews from patients and their families, and has attracted accolades as one of the star programs within the Saskatoon Health Region.

With her new chair award, Dr. Morgan is poised to further develop and enhance this innovative community-based approach to dementia care.

^ **Dr. Debra Morgan works with fellow specialists and community members to improve diagnosis and treatment of dementia in seniors living in Saskatchewan's rural and remote communities.**

Partnerships for Health System Improvement

The Partnerships for Health System Improvement (PHSI) Program is a CIHR initiative run by the Institute for Health Services and Policy Research (IHSPR). It is designed to support teams of researchers and decision-makers interested in conducting applied health services research useful to health system managers and or policy makers over the next two-to-five years.

The Ministry of Advanced Education, Employment and Labour provides $150,000 per year to the Foundation from its Innovation and Science Fund to support teams doing research in Saskatchewan. The matching ratio for PHSI in Saskatchewan is 3:1, where CIHR provides the larger amount.

Teams apply to CIHR, which manages the peer review process. The Foundation's role is to encourage more applications in Saskatchewan, manage the provincial matching funds, and participate in the required relevance review. CIHR revised the program in 2008-09, based on consultations with researchers and funding partners, resulting in an increase in the amount of the grant and a streamlined application process. SHRF's agreement with CIHR to participate in PHSI includes competitions up to and including June 2010, at which time the agreement may be renewed.

Improvements ✓

A Prescription for Improved Safety and Cost-effective Care

Highlight
PARTNERSHIPS FOR HEALTH SYSTEM IMPROVEMENT

As Canada's health system continues to face drug safety controversies and escalating costs of chronic disease, a process known as "academic detailing" endeavours to provide doctors with evidence informed, balanced drug information to prescribe medicines and care for their patients.

Academic detailing programs currently exist or are being initiated in six Canadian provinces, offering support to busy physicians looking for clinically relevant, non-commercial information. Through one-on-one or small group visits, these education outreach programs aim to help doctors prescribe drugs based on the best available medical evidence, supporting patient safety and cost-effective care.

Co-investigators Dr. Malcolm Maclure of the University of Victoria, Dr. Tanya Verrall from the Health Quality Council and adjunct professor at the University of Saskatchewan, and Loren Regier from the Saskatoon Health Region will evaluate the impact of these programs. The researchers and their collaborators will focus specifically on chronic health problems, including diabetes, chronic obstructive pulmonary disease, chronic pain, high blood pressure, and depression.

By providing more evidence about the effectiveness of academic detailing programs, the research team hopes to inform health system decision makers, strengthen chronic disease management, and ultimately, improve patient outcomes.

Table 2: Matching Grants and Awards, 2008-09*

Matching Funding Program	Awarded		
	No.	Term	$
Regional Partnership Program**			
Operating Grants	6	2 yrs	1,099,852
New Investigator Salary Awards	2	5 yrs	600,000
Fellowships	0	n/a	n/a
Doctoral Awards	0	n/a	n/a
Applied Health Services and Policy Research Chair**	1	5 yrs	925,000
Partnerships for Health System Improvement***	1	3 yrs	200,000
Total			**2,824,852**

* Awarded amounts are for the full term of the grant.
** Awarded amounts include both the CIHR and SHRF commitments (1:1).
*** Awarded amounts include both the CIHR and SHRF commitments (3:1).

Regional Partnerships Program

The Saskatchewan – Canadian Institutes of Health Research Regional Partnership Program (Sask-CIHR RPP) is intended to increase the level of nationally funded health research in Saskatchewan. In its strategic plan for RPP, Saskatchewan's advisory committee chose the following CIHR programs as its priorities: Open Operating Grants; New Investigator Salary Awards; and Doctoral Student Awards. In addition, Fellowship Awards may be funded if resources permit.

The Sask-CIHR RPP has a $2-million per year envelope, provided by CIHR and provincial funds. In Saskatchewan, funding consists of $700,000 per year from SHRF, $250,000 per year from the Ministry of Advanced Education, Employment and Labour (Innovation and Science Fund), and $50,000 for studentships from the Universities of Saskatchewan and Regina. SHRF manages these funds with its university and government partners through a provincial advisory committee.

Researchers apply directly to CIHR, which does the peer review and ranks the applications. Researchers with very good scores that are just below CIHR's high funding cut-offs are funded on 1:1 matching basis. SHRF's agreement with CIHR to participate in the RPP runs until 2010-11, at which time the agreement may be renewed.

APPLIED HEALTH SERVICES AND POLICY RESEARCH CHAIR

Debra Morgan
Canadian Centre for Health and Safety in Agriculture
University of Saskatchewan
Healthcare Delivery Across the Continuum for Rural and Remote Seniors with Dementia

PARTNERSHIPS FOR HEALTH SYSTEM IMPROVEMENT

Malcolm Maclure (University of Victoria), **Tanya Verrall** (Health Quality Council and University of Saskatchewan), and **Loren Regier** (Saskatoon Health Region)
Partnership for Ongoing Impact Assessment of Academic Detailing

REGIONAL PARTNERSHIP PROGRAM GRANTS AND AWARDS

Operating Grants

Qiang Liu
Vaccine and Infectious Disease Organization, University of Saskatchewan
Mechanisms mediating hepatitis C virus core protein induced fatty acid synthase up-regulation: the role of phosphoinositide 3-kinase, Akt isoforms Akt1 and Akt2

Scot Stone
Biochemistry, Medicine, University of Saskatchewan
Structure, function and regulation of diacyglycerol acyltransferase-1 (DGAT1), a key enzyme in triacylglycerol synthesis and energy homeostasis

Roger Pierson
Obstetrics, Gynecology and Reproductive Sciences, Medicine, University of Saskatchewan
Human Ovarian Functional Dynamics: Elucidating Follicle Waves

David Sanders
Chemistry, Arts and Science, University of Saskatchewan
Structural and biological studies of fungal UDP-galactopyranose mutase

Alex Zakhartchouk
Vaccine and Infectious Disease Organization, University of Saskatchewan
Novel Vaccines for Measles

Yan Zhou
Vaccine and Infectious Disease Organization, University of Saskatchewan
Influenza A virus infection activates PI3K/Akt pathway

New Investigator Salary Awards

Lixin Liu
Pharmacology, Medicine, University of Saskatchewan
LSP1 signaling mechanisms in chemokine-induced neutrophil emigration

Pammla Petrucka
Nursing, University of Saskatchewan
Ocantu Duta Amani: Paths to living well for aboriginal youth

< **Using helium, oxygen, and exercise to improve health in people with chronic lung disease:** Dr. Scott Butcher at the University of Saskatchewan

Peer Review

Grant Selection Process

Our selection processes are founded on peer review, where panels of active researchers assess proposals using excellence, relevance and feasibility as key deciding factors. Applications must also exemplify the stated objectives and priorities for the particular funding program (as described in our *Awards Guide*). Our granting process has multiple steps listed below. Peer review for any programs where SHRF is matching or partnering with other funding agencies may be done by the other agency, so long as SHRF requirements are met.

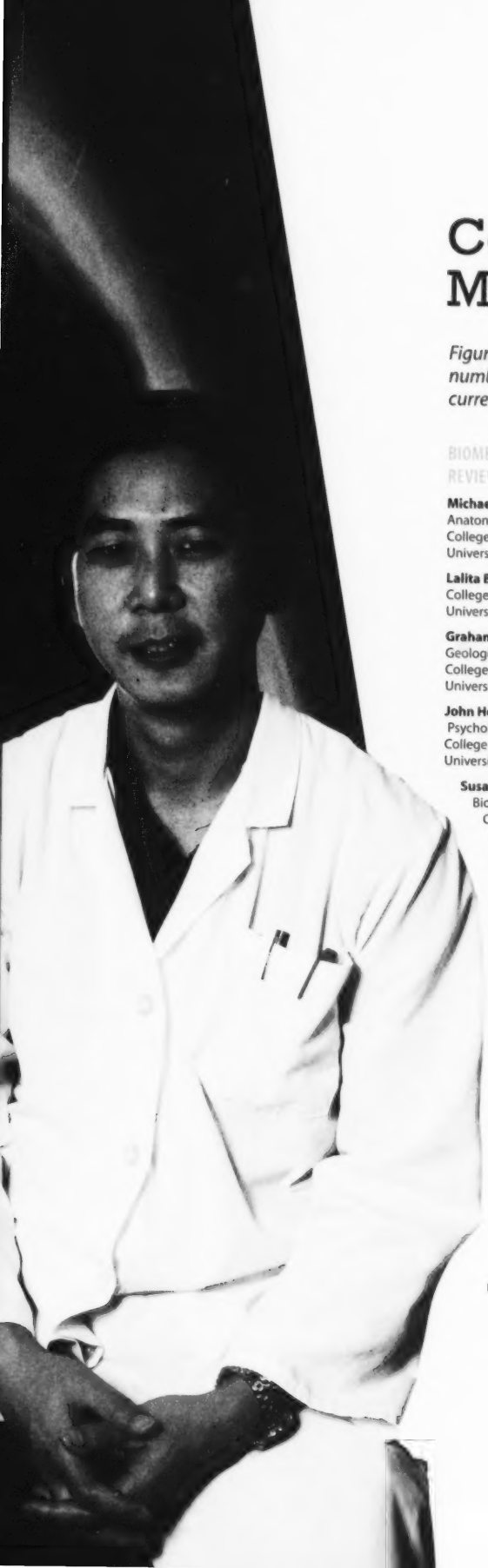
Selection Steps

- SHRF invites reviewers to serve on committees
- Applicants submit applications to SHRF
- SHRF staff screen applications for completeness and eligibility
- Review committee chair, with SHRF staff, assigns applications to reviewers
- Reviewers prepare in-depth assessments, based on program criteria and excellence
- Committee meets to discuss rate and rank all applications
- Committee recommends meritorious applications for funding
- SHRF Board reviews and approves the committee's recommendations
- SHRF offers grants and awards to as many recommended applicants as resources permit
- SHRF staff ensure all conditions are met before authorizing payments to researchers' home institutions

Our peer reviewers are not only instrumental in evaluating applications, they also provide valuable feedback to us about procedures, programs and trends in the health research community. Peer review committee members for 2008-09 are listed in this section.

We are extremely grateful to our dedicated review committee chairs and members who so generously volunteer their time and expertise for up to three-year terms. These dedicated individuals contribute to the collective wisdom that is critical to the quality and integrity of our selection processes.

Lessening the impact of lung inflammation from influenza: SHRF Postdoctoral Fellow Dr. Xinya Lu (far right) with supervisor Dr. Yan Zhou at the Vaccine and Infectious Disease Organization at the U of S.



Committee Membership

Figures in parentheses indicate number of years served, including current year.

BIOMEDICAL PERSONNEL AWARDS REVIEW COMMITTEE

Michael Corcoran (Chair)(1)
Anatomy and Cell Biology
College of Medicine
University of Saskatchewan

Lalita Bharadwaj (2)
College of Nursing
University of Saskatchewan

Graham George (1)
Geological Sciences
College of Arts and Science
University of Saskatchewan

John Howland (1)
Psychology
College of Arts and Science
University of Saskatchewan

Susan Kaminskyj (2)
Biology
College of Arts and Science
University of Saskatchewan

Gillian Muir (3)
Veterinary Biomedical Sciences
Western College of Veterinary Medicine
University of Saskatchewan

Scott Murphy (1)
Chemistry and Biochemistry
Faculty of Science
University of Regina

Adil Nazarali (1)
College of Pharmacy and Nutrition
University of Saskatchewan

Elemir Simko (1)
Veterinary Pathology
Western College of Veterinary Medicine
University of Saskatchewan

BIOMEDICAL ESTABLISHMENT GRANT REVIEW COMMITTEE

Bill Roesler (Chair) (2)
Biochemistry
College of Medicine
University of Saskatchewan

Gregg Adams (1)
Veterinary Biomedical Sciences
Western College of Veterinary Medicine
University of Saskatchewan

Jane Alcorn (1)
College of Pharmacy & Nutrition
University of Saskatchewan

Volker Gerdts (2)
Vaccine and Infectious Disease Organization
University of Saskatchewan

Lisa Kalynchuk (2)
Psychology
College of Arts and Science
University of Saskatchewan

David Sanders (2)
Chemistry
College of Arts and Science
University of Saskatchewan

David Schreyer (1)
Anatomy and Cell Biology
College of Medicine
University of Saskatchewan

Emina Torlakovic (1)
Pathology
College of Medicine
University of Saskatchewan

Christopher Yost (2)
Biology
Faculty of Science
University of Regina

SOCIO-HEALTH, SYSTEMS, AND CLINICAL REVIEW COMMITTEE

Lesley Biggs (Chair) (2)
Women's and Gender Studies
College of Arts and Science
University of Saskatchewan

Adam Baxter-Jones (2)
College of Kinesiology
University of Saskatchewan

Patty Beck (2)
Population Health Branch
Saskatchewan Ministry of Health

David Blackburn (1)
Pharmacy and Nutrition
University of Saskatchewan

Juliette Cooper (1)
School of Medical Rehabilitation
Faculty of Medicine
University of Manitoba

Wendy Duggleby (3)
College of Nursing
University of Saskatchewan

Darlene Juschka (1)
Women's Studies Program
Faculty of Arts
University of Regina

Judith Kulig (3)
School of Health Sciences
University of Lethbridge

Michael MacGregor (3)
Psychology
College of Arts and Science
University of Saskatchewan

HEALTH RESEARCH TEAM AND RESEARCH GROUP DEVELOPMENT GRANT REVIEW COMMITTEE

Rod Kelln (Chair) (1)
Faculty of Graduate Studies and Research
University or Regina

Leon Browder (1)
Biochemistry and Molecular Biology/Oncology
Faculty of Medicine
University of Calgary

Brenda Elias (2)
Community Health Sciences
Faculty of Medicine
University of Manitoba

Robert J. Hilsden (1)
Medicine, and Community Health Sciences
Faculty of Medicine
University of Calgary

Tom Wishart (1)
Psychology
College of Arts and Science
University of Saskatchewan

Supportive Environment

Common CV and Research Directory

Our participation in the Canadian Common CV (curriculum vitae) initiative started in 2007-08 and has resulted in a simpler application process and reduced data entry for researchers. The CCV is an online repository where researchers may enter and update information about their experience, publications and funding record and use it for submitting grant applications to many different agencies. We look forward to an even better system in the future, as the CCV Secretariat at the Canadian Institutes of Health Research undertakes a major upgrade to update the system architecture and enhance data standards.

When Saskatchewan researchers complete their CCV, they are invited to add their information to the Saskatchewan Directory of Health Researchers. This SHRF-led initiative was a response to many calls for a health research inventory in the province. It was made possible because of our existing partnerships with other agencies in Canada that designed a directory structure that could be adopted and expanded across the country. The Saskatchewan directory will soon be linked into a national research directory.

The directory is a very useful tool for networking, finding experts in certain fields, and for determining strengths and gaps in the research landscape. With SHRF's participation, any researcher in Saskatchewan – not just applicants – can complete the CV modules and contribute to the Saskatchewan directory via our portal. We invite you to take a look at this rich resource (access from www.shrf.ca), which now lists over 350 Saskatchewan health researchers.

Research Data Centre

The Statistics Canada Research Data Centre (RDC) opened in April, 2008 under the leadership of the University of Saskatchewan and with the help of many partner agencies, including SHRF, which provides funding and sits on the management committee. Saskatchewan was one of only two provinces without such a centre.

RDCs are considered essential infrastructure for quantitative inquiry leading to better policy decisions through evidence-based information and recommendations. While the range of potential research is broad, about half the usage across Canada is health related. Operations are led by academic director Dr. Carl D'Arcy and are overseen by a management committee.

Since the Centre's inception:

- twenty six researchers used the centre including seven students and one foreign scholar;
- nine new projects were started and six projects were transferred from other RDCs;
- project fields have included health, business, economics, and sociology;
- several students have used the centre as part of their thesis project;
- a statistical assistant was hired, allowing the centre to be open five days a week.

More recently, two projects have begun and several more are in preparation. SHRF looks forward to supporting the RDC and seeing the impact the Centre has on research capacity and productivity in Saskatchewan.

Health Research Co-ordination

Over the years, the Foundation has supported special positions at both major universities focused on increasing health research activity and attracting more national health research funding to the province.

The first such position was the University Co-ordinator of Health Research at the University of Saskatchewan (U of S), established in 1999 and supported by the Foundation and the University. Dr. Bruce Waygood held this position until his retirement in June 2007. With Dr. Waygood's leadership and mentoring, more researchers applied for national grants and achieved greater success rates. This change, along with special programs like CIHR's Regional Partnership Program, contributed to a four-fold increase in CIHR funding to Saskatchewan between 1999 and 2005.

In July 2007, the role expanded to a shared position between the U of S (Associate Vice-President Research, Health) and the Saskatoon Health Region (Vice-President of Research and Innovation). Dr. Beth Horsburgh was recruited to this new position and, working with her advisory committee, has been consulting widely to develop a business plan. Strategic directions include translational research, innovative practice, and strengthening clinical research capacity and infrastructure.

The Foundation also supports a Health Research Leader position at the University of Regina. The purpose of this five-year partnership, started in 2005, is to increase health-related research activity and to link with the Regina Qu'Appelle Health Research on strategic initiatives of common interest. Dr. Murray Knuttila carried out this role for most of 2008-09 until Dr. Mary Hampton took it on near year-end.

Measuring Impact

Ultimately, the goal of health research is to improve people's health.

This can manifest as new discoveries that improve prevention and treatment of disease. It can also come in the form of novel strategies that allow better and faster health care decisions, or enhanced public policy.

How does health research funding move us toward this goal? Evaluation helps answer this question.

In evaluating the impact of SHRF's research funding it is important to:

- demonstrate accountability to government, universities, researchers, and the people of Saskatchewan;
- demonstrate the successes and challenges of implementing the Health Research Strategy; and
- assess impacts and benefits of investing public funds in health research.

Together with funding organizations across the country, SHRF co-sponsored an assessment performed by the Canadian Academy of Health Sciences (CAHS) titled *Making an Impact: A Preferred Framework and Indicators to Measure Returns on Investment in Health Research*. The study provides a framework with which to measure returns on investment in health research.

SHRF will be working with the National Alliance of Provincial Health Research Organizations (NAPHRO) and national partners to implement some of the recommendations. The *Making an Impact* report and associated information is available on the SHRF website: http://www.shrf.ca/CAHS_Research_ROI_Report.

< **Developing tools and protocols to better manage osteoporosis:** Dr. Shanthi Johnson at the University of Regina

Health Research Strategy

Influence of Saskatchewan's *Health Research Strategy*

Senior representatives from three universities, four health regions, two non-profit organizations, and one from government were interviewed to create a broad picture of awareness and use of the *Health Research Strategy* throughout organizations in the province.

There was consensus on the need for a central provincial focus through the Strategy to provide direction for health research priorities and funding. As well, there was general awareness of the importance of knowledge translation and a movement to develop and implement policy. The Strategy was also seen as useful in building research capacity with program and infrastructure development, partnerships, and retention and recruitment of researchers.

Suggestions for future strategic directions for SHRF include creating inter-provincial partnerships, supporting provincially shared institutes, improving links among researchers and health regions, strengthening capacity to use research on the front lines, and reviewing research priorities to ensure they are current.

Health Indicators and Mapping Priorities

Using Canadian Institute of Health Information (CIHI) data, we assembled health indicator data for Saskatchewan to identify some of the more prevalent health issues facing our province. This information will be mapped against the *Health Research Strategy's* priorities and Saskatchewan's research capacity, using the Saskatchewan Directory of Health Researchers. What we learn will be used to assess strengths and gaps and possibly refresh the priority areas.

***Health Research Strategy* Five-year Evaluation**

Planning has begun for the *Health Research Strategy* five-year evaluation to be done in 2009-2010. Existing sources of data and documentation will be used, along with interviews and commentary from key stakeholders in the research community. This exciting project will demonstrate accountability to all stakeholders, identify successes and challenges in implementing the Strategy, and point to possible adjustments and improvements.

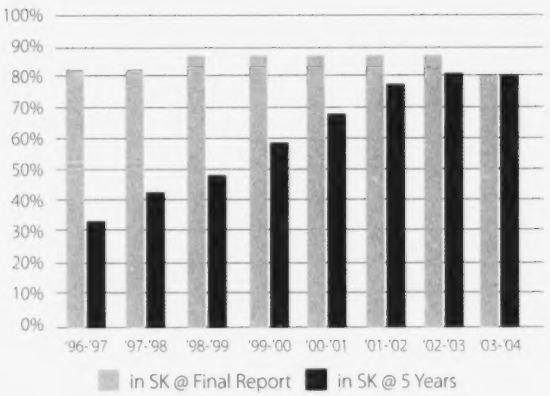
Program Impact

Establishment Grant Holders – Five-year Follow-up

The annual five-year follow-up study with the 2003-04 New Investigator Establishment Grant holders was completed to measure impact of the program on the researchers' careers, subsequent research, ability to attain national funding and research productivity. We now have eight years of longitudinal data. Highlights include:

- Nine out of 10 grantees responded to the online survey;
- Eight of 10 researchers were in the province at final report;
- All eight who were in the province at final report remained in the province to conduct research over the last five years;
- Fifty five per cent of respondents had a primary author publication;
- Eight of nine respondents had received another major grant (over $25,000);
- For every SHRF dollar of funding, researchers attained $4.3 as a Principal Investigator and $14.4 as a Co-Investigator in national funding.

Figure 1: Researcher retention in Saskatchewan



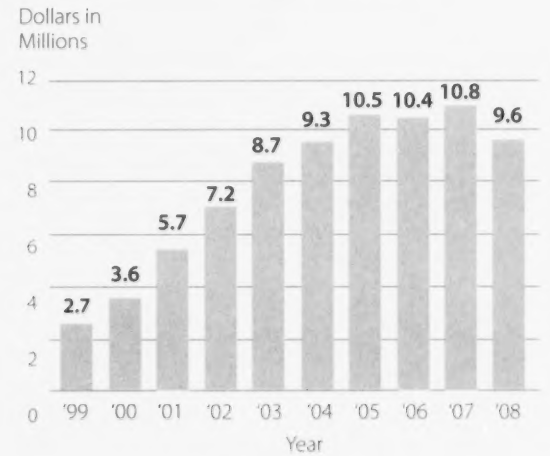
Operations

Balanced Scorecard

Further developmental work has continued on the SHRF Balanced Scorecard (BSC). The BSC approach is comprised of four perspectives including: 1) Resources; 2) People, Growth and Learning; 3) Quality Processes; and 4) Outcomes. This approach translates strategy into actionable and measurable objectives.

When the four balanced perspectives are cross-referenced with SHRF's strategic directions, the result is SHRF's new BSC Strategy Map. The Strategy Map is an important tool used to maintain balance in SHRF's operations. It also is a great visual outlining how SHRF's values, resources, personnel and operations contribute to the outcomes, impacts and mission and vision of SHRF. Key performance indicators for the four BSC perspectives representing the four *Health Research Strategy* themes are in development along with data management and reporting systems.

Figure 2: CIHR funding to Saskatchewan



National Comparisons

Canadian Institutes of Health Research (CIHR) Funding

SHRF uses the share of national funding attained by provincial health researchers as a key indicator of research performance and capacity. Saskatchewan researchers were successful 154 times and attained over $9.4 million in CIHR competitive funding for the 2008-09 fiscal year. Saskatchewan has experienced a steady increase in CIHR funding over the past 10 years (see Figure 1). During that 10-year span Saskatchewan researchers have received over $87 million in CIHR funding.

Publication Trends

SHRF encourages funded researchers to publish their work and ensure it is widely shared.

As a member of the National Alliance of Provincial Health Research Organizations (NAPHRO), SHRF receives annual updates of Saskatchewan bibliometric data (i.e., trends in scientific publications) from Science Metrix. Bibliometric analysis assesses research activity and is one of many indicators used to evaluate the impact of health research.

In comparison to other provinces, Saskatchewan ranks seventh in quantity of health research papers produced. The overall impact rating these papers is just above the world average.

The Rocks in Our Heads

The President of the United States has rocks in his head. So does the Secretary General of the United Nations, the CEO of Microsoft and your next door neighbour. In fact, we all do.

Dr. Helen Nichol is studying these rocks – metals and minerals present in every human brain. She uses synchrotron imaging to map and characterize metals that accumulate, or are missing, in both normal and diseased brains.

Health Research Impact Highlight
HELEN NICHOL

"Understanding how these metals accumulate is something that brings us closer to understanding debilitating conditions like ALS, Parkinson's, or even strokes," explains Nichol, a researcher in the University of Saskatchewan's College of Medicine.

Nichol has also initiated new projects using the synchrotron to image metals in multiple sclerosis (funded through Cameco's Quest for a Cure campaign) and neurodegenerative diseases that have a known genetic cause.

In many of her experiments, Nichol uses the common *Drosophila* fruit fly as a model. Fruit flies can be genetically modified to mimic certain human diseases, and allow researchers to experiment on a living organism instead of dead tissue.

Nichol says her early use of synchrotron imaging, which provides far greater detail than X-rays or MRIs, was made possible through a SHRF New Investigator Establishment grant in 2003-04.

"The CLS synchrotron wasn't up and running in Saskatoon yet, so it was necessary to travel to the Stanford Synchrotron Radiation Lightsource in California where these techniques were under development," she explains.

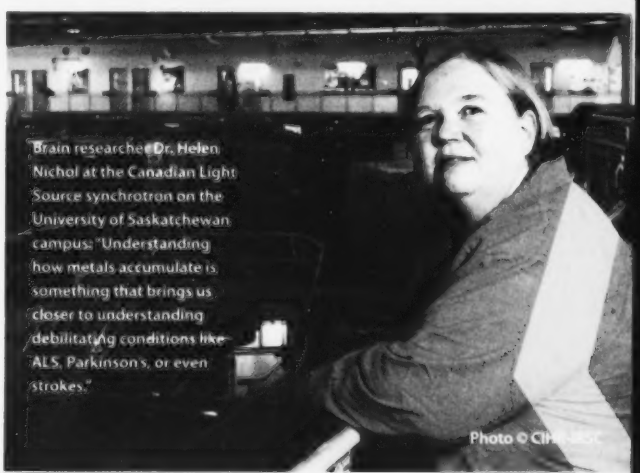
The funding helped her compete successfully for national grants. A grant from the Canadian Institutes of Health Research (CIHR), for example, helped Nichol build a network of collaborators from across Canada to discover new ways of seeing metals in both the fruit fly and the human brain.

Over the next year, Nichol plans to learn more about fruit fly genetics at the NASA Ames Research Centre in California. While on sabbatical, she will collaborate with Ames researchers on a study of unique iron particles found in moon dust. These particles are of interest because of the danger they could present to workers or inhabitants of a future base on the moon.

All of this activity, she notes, can be traced back to the SHRF New Investigator Establishment grant

"It's basic. If I hadn't received SHRF funding when I first came to the U of S, I couldn't have moved successfully into synchrotron imaging. You also need money for graduate student stipends, and all of the supplies and equipment that they need to do their work," Nichol says.

"Support from SHRF enabled me not only to train Saskatchewan students in cutting-edge, synchrotron-based health research, but also to remain competitive on national and international levels."



Brain researcher Dr. Helen Nichol at the Canadian Light Source synchrotron on the University of Saskatchewan campus: "Understanding how metals accumulate is something that brings us closer to understanding debilitating conditions like ALS, Parkinson's, or even strokes."

Photo © CIHR/CLSC

Establishing a World-Class Vaccine Research Career

Someday, parents around the world may thank Dr. Volker Gerdts for keeping their children safe from disease without the pain of a vaccination needle.

Health Research Impact Highlight
VOLKER GERDTS

Gerdts, associate director of research at the Vaccine and Infectious Disease Organization (VIDO) at the University of Saskatchewan, is becoming known as an expert in the area of neonatal immunization: vaccinating newborn infants against disease. In 2008, he was one of six Canadian researchers to receive a Grand Challenges Exploration grant from the Bill and Melinda Gates Foundation.

"They choose researchers from around the world who have these crazy ideas, and in the first year you receive funds to develop a proof of concept," he says.

"If that works out, they provide $2 million over the next two years, and if it makes it to Phase 3 they provide even more funding."

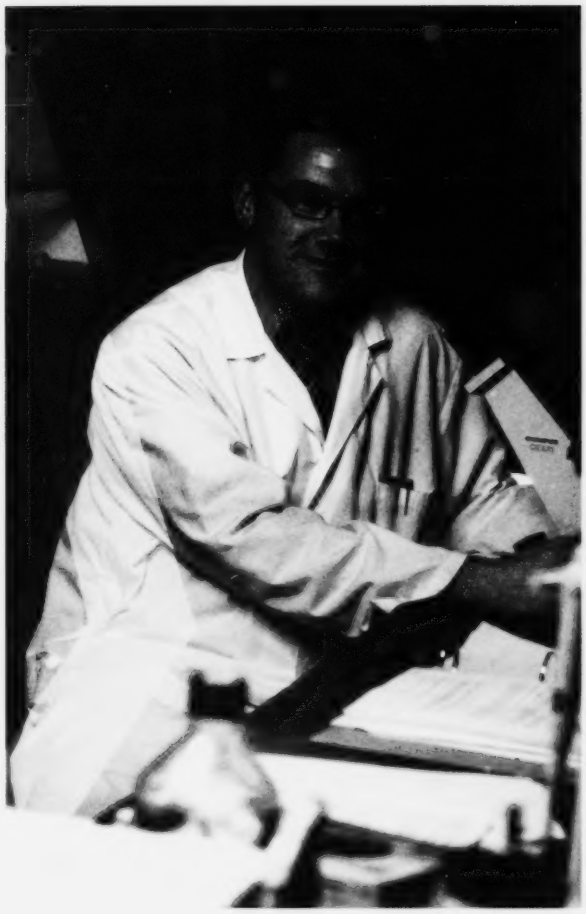
Gerdts's "crazy idea" is to look at ways of vaccinating mothers during pregnancy, protecting babies from disease before they're even born.

Gerdts is also working on a much larger Gates-funded project: an international effort to develop a new whooping cough vaccine against this disease, which kills about 400,000 children every year. The aim is a vaccine that works with just one injection rather than the five now required during the first few years of life, which isn't practical in developing countries. The search for a single-vaccine solution is being led by Dr. Lorne Babiuk, a recognized authority in vaccines and infectious disease and VIDO's director from 1993 to 2007.

Gerdts says early support from a SHRF New Investigator Establishment grant in 2003-04 was an important starting point in his own research career.

"SHRF helped me establish myself in Saskatoon as a young researcher. I received the establishment grant, and some of my students received postdoctoral fellow grants. It helped with certain projects in the beginning that were related to my original pertussis (whooping cough) research."

The SHRF support opened other doors. It allowed Gerdts to become a part of the vibrant U of S infectious disease research community, and provided opportunities for interaction with other SHRF-funded researchers. He was also able to leverage the initial SHRF-funded project into successful grants from national funding agencies such as CIHR – and eventually, the Grand Challenges grant.



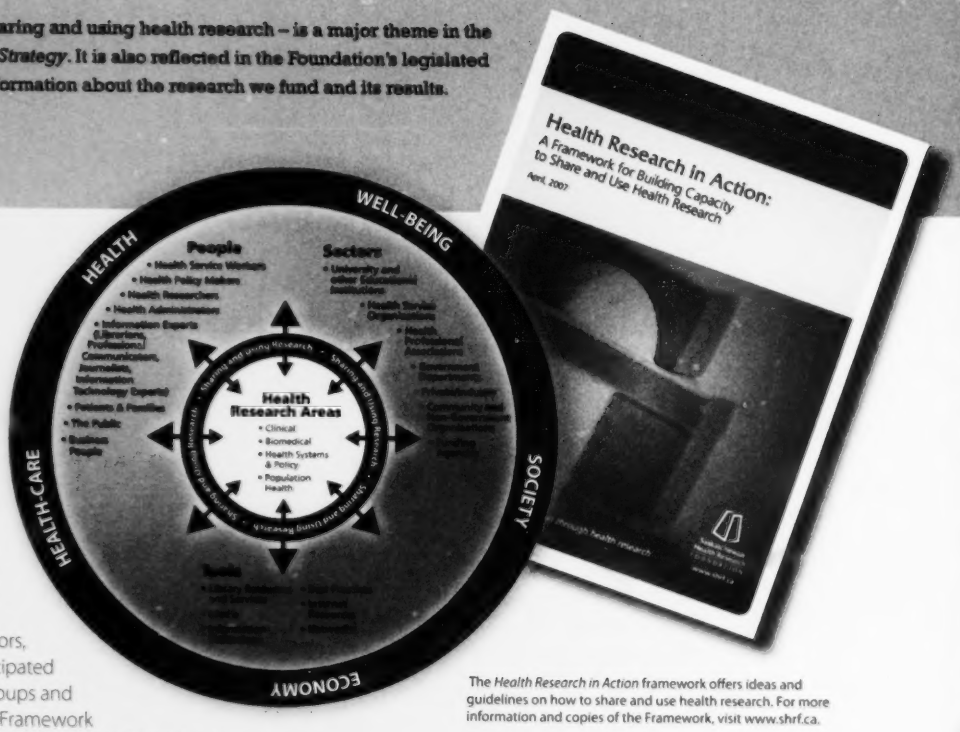
^ **Dr. Volker Gerdts at the Vaccine and Infectious Disease Organization at the University of Saskatchewan is working to develop better vaccines to save children's lives in the developing world.**

"I think this is very important we have SHRF, so that when we attract people to the province we have funding to help them get established, to fund their postdocs and students, and to get their labs going," Gerdts says.

"Once they're established and things are going well, the (national) agencies are there. But you need something at the beginning."

Knowledge Translation

Knowledge translation – sharing and using health research – is a major theme in the provincial *Health Research Strategy*. It is also reflected in the Foundation's legislated mandate to disseminate information about the research we fund and its results.

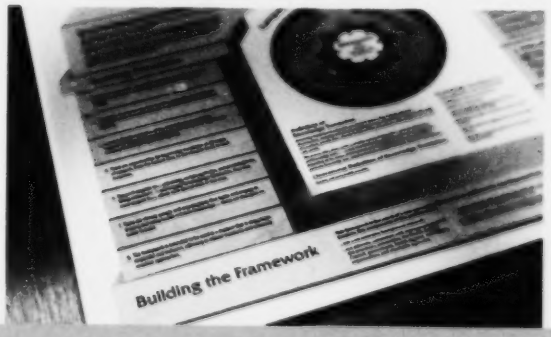


The *Health Research in Action* framework offers ideas and guidelines on how to share and use health research. For more information and copies of the Framework, visit www.shrf.ca.

Health Research in Action Framework

In April 2007, we released a provincial framework for building capacity to share and use health research. It was based on extensive consultation and background research on this complex issue. People from around the province, within many organizations and sectors, and in a range of occupations participated in our advisory committee, focus groups and final workshop. We have shared the Framework widely and continue to do so; the plan has been well-received both within and outside Saskatchewan.

It consists of three parts: guiding principles; strategic directions and actions; and implementation guidelines. The three strategic directions advise agencies to: 1) explicitly acknowledge knowledge translation in job descriptions and work plans and reward these activities; 2) educate and support people to share and use health research; and 3) create and enhance structures, tools and policies that facilitate the process. The framework is intended to serve as a template that agencies in many different sectors may adopt, in part or whole, to help them improve their capacity for sharing and using research to improve their work.



National KT Funders' Network

For two years, we have been part of a national network co-ordinated by CIHR that brings together funding agencies across the country to explore best practices and new ways for supporting and encouraging knowledge translation. In February, CIHR convened the second Network meeting, with the theme "KT Capacity Development: Mapping the landscape and exploring opportunities for collaboration." We participated in a panel on "Understanding what we mean by KT capacity development" and presented our *Health Research in Action* Framework. The group also shared information about resources and best practices for KT capacity development and how to evaluate KT capacity development initiatives. CIHR established an online SharePoint as a collaborative workspace to share documents and support Network communications. The Network is linked to the Forum of Health Research Funders, a national body of provincial, federal and charitable research funding agencies, which has KT as a standing item because of its importance to improving health and health care across the country.

Partner in CIHR's Evidence on Tap

CIHR's Institute for Health Services and Policy Research (IHSPR) is piloting a new initiative, Evidence on Tap, in Saskatchewan and two other provinces. While the Ministry of Health is the lead on this in Saskatchewan, SHRF has helped with planning and engaging some Saskatchewan researchers in the process. The main component is the "Best Brains Consultation" where CIHR brings in leading researchers to share their insights and discuss critical issues identified by the Ministry. To date, there have been two Saskatchewan sessions, one on patient-centred care and one on rural health. In this unique knowledge exchange venue, policy-makers have the opportunity to connect directly with leading researchers in the field. The goal is more evidence-informed policy-making and more policy-relevant research.

Café Scientifique

Café Scientifique is a CIHR partnership program that brings together CIHR-funded health researchers and members of the public in an informal setting such as a restaurant or other public meeting place. SHRF received a $3,000 grant from CIHR under the program, which it supplemented with its own funds to help highlight Saskatchewan researchers and share their knowledge with the public.

SHRF presented two successful Cafés this year in partnership with the University of Regina and University of Saskatchewan.

The first was held at the MacKenzie Gallery in Regina on December 1, 2008 in conjunction with Health Research Week and featured Dr. Thomas Hadjistavropoulos from the U of R and Dr. Ken Craig from the University of British Columbia. Titled, "I Can't Tell You How This Hurts Me," the presenters discussed the problem of managing pain in people that cannot communicate, such as babies or seniors suffering from dementia.

The second Café, held at EE Burritos restaurant in Saskatoon on April 8, 2009, was titled "For the Health of Us All: Mental Health, Substance Abuse, and the Well-Being of Communities." The panel featured Sharon Acoose from the First Nations University of Canada, Dr. Peter Butt from the U of S College of Medicine Northern Medical Services Division, Dr. Colleen Dell from the U of S School of Public Health, and Dr. Caroline Tait from the Indigenous Peoples' Health Research Centre. A lively discussion covered topics such as links between mental health and substance abuse, cultural and social factors, and personal accounts of struggles with addiction, particularly alcoholism.

SHRF also provided support for two Cafés organized and presented by the U of S Research Communications Office. The first, held in October, examined the topic of food safety, while the second, held in conjunction with Health Research Week, looked at the issues and technologies surrounding assisted human reproduction.

^ **Café Scientifique Saskatoon:** Dr. Peter Butt, Dr. Colleen Dell, Sharon Acoose, and Dr. Caroline Tait at EE Burritos in April 2009. **Café Scientifique Regina:** Dr. Kenneth Craig, Dr. Thomas Hadjistavropoulos, and moderator Dr. Murray Knuttila at the Mackenzie Art Gallery in December 2008.

Dissemination and Promotion

Sharing knowledge, celebrating excellence

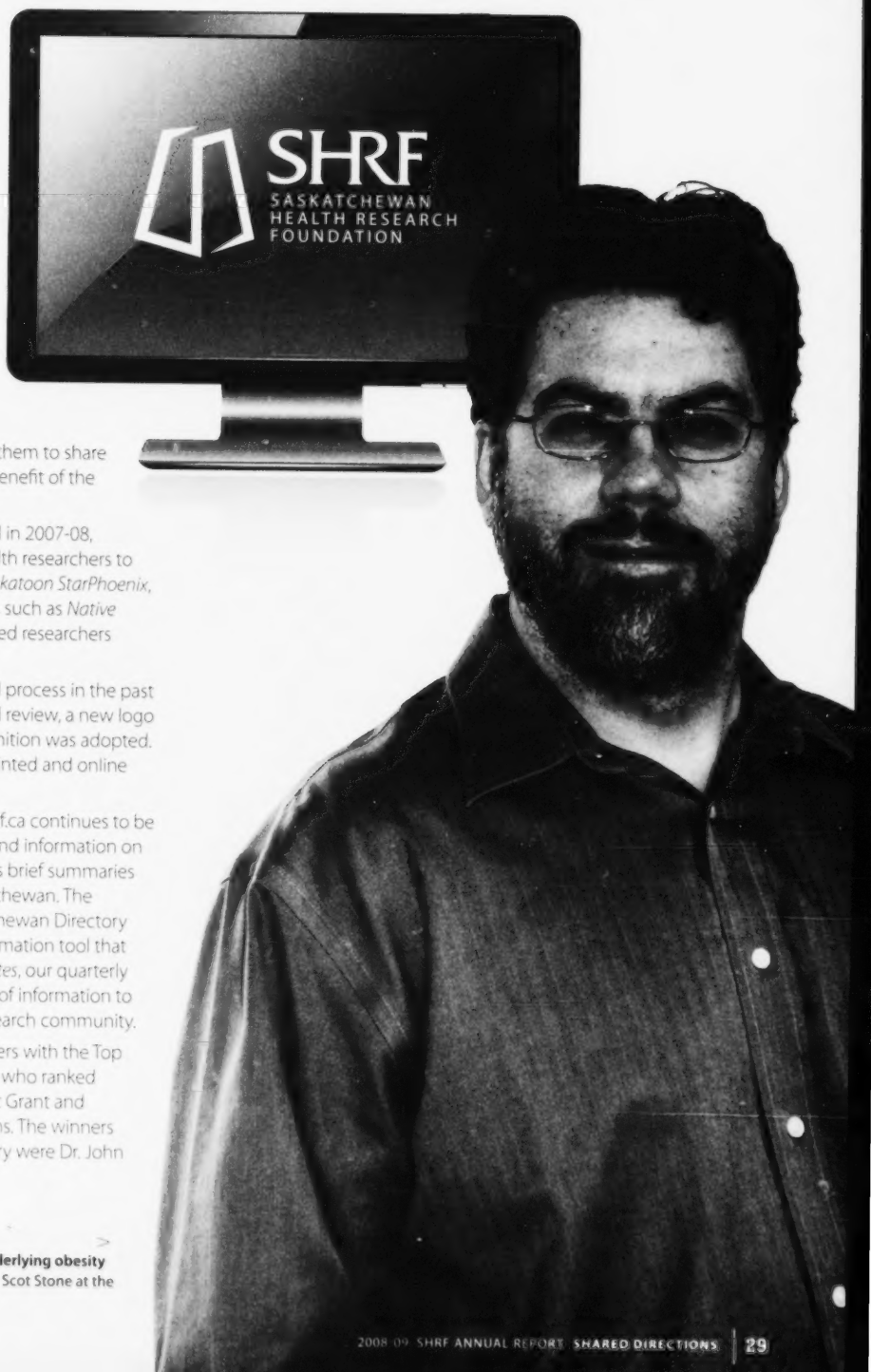
SHRF works to spread the news about and promote health research excellence in this province. Through these activities, SHRF is being accountable to the people of Saskatchewan by sharing information about the innovative and exciting research being funded by public money. These dissemination and promotion efforts also foster connections between researchers and stakeholders, links that help them to share and use health research knowledge for the benefit of the people of our province.

The Research for Health campaign continued in 2007-08, introducing some of Saskatchewan's top health researchers to the public through advertisements in the *Saskatoon StarPhoenix*, *Regina Leader-Post*, and specialty publications such as *Native Journal*. Advertisements highlight SHRF-funded researchers working in a wide range of endeavour.

SHRF's visual identity went through a renewal process in the past year. After extensive internal consultation and review, a new logo designed for greater visual impact and recognition was adopted. The logo is being incorporated into SHRF's printed and online materials in 2009-10.

The Foundation's online presence at www.shrf.ca continues to be a core communications channel, with news and information on funding programs and partnerships, as well as brief summaries on all SHRF-funded researchers across Saskatchewan. The website is also the entry point for the Saskatchewan Directory of Health Researchers, a networking and information tool that now contains more than 350 names. *SHRF Notes*, our quarterly electronic newsletter, continued as a conduit of information to more than 1,000 subscribers in the health research community.

SHRF once again honoured our new researchers with the Top Researcher Awards, given to those individuals who ranked highest in the New Investigator Establishment Grant and Postdoctoral Research Fellowship competitions. The winners in the New Investigator Establishment category were Dr. John

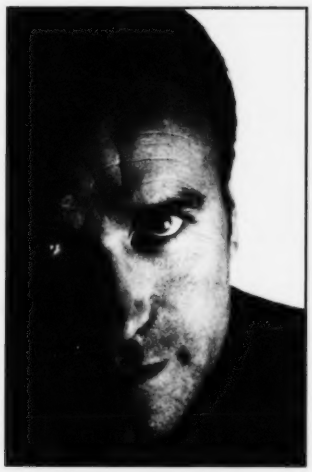


Exploring the biochemistry underlying obesity and cardiovascular disease: Dr. Scot Stone at the University of Saskatchewan

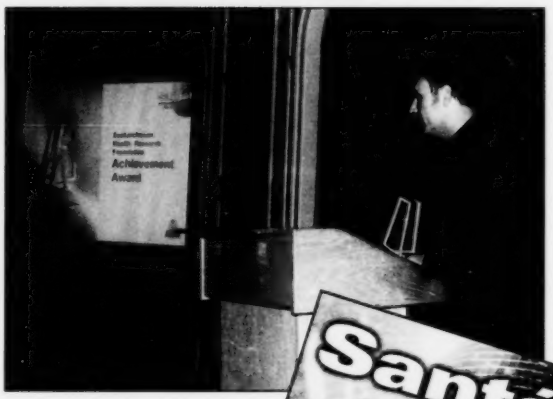
Howland (Biomedical) and Dr. Lawrence Brawley (Socio-Health). Top honours in the Postdoctoral Research Fellowship category went to Dr. Gloria DeSantis (Socio-Health) and Dr. Bonnie Chaban (Biomedical).

The Achievement Award was revamped this year based on input from the research community and internal strategic planning. As a result, several excellent candidates were put forward by their colleagues. Psychologist Dr. Gordon Asmundson from the University of Regina was selected by an independent panel to receive the honour this year.

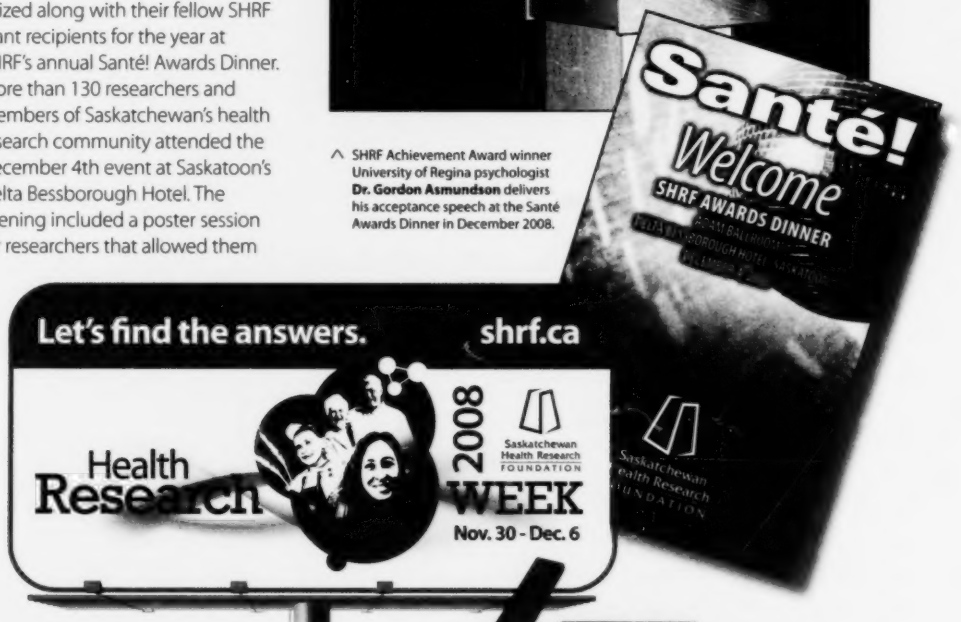
All award winners were recognized along with their fellow SHRF grant recipients for the year at SHRF's annual Santé! Awards Dinner. More than 130 researchers and members of Saskatchewan's health research community attended the December 4th event at Saskatoon's Delta Bessborough Hotel. The evening included a poster session for researchers that allowed them to discuss their projects with colleagues and VIPs, followed by a gala dinner. Special guests once again included the Honourable Rob Norris, Saskatchewan Minister of Advanced Education, Employment and Labour, who brought greetings from the provincial government and congratulations to the award winners.



^ **Dr. Gordon Asmundson**
Winner, Achievement Award 2008



^ SHRF Achievement Award winner University of Regina psychologist **Dr. Gordon Asmundson** delivers his acceptance speech at the Santé Awards Dinner in December 2008.



The Santé! Awards Dinner was the highlight of Health Research Week from December 2-8. Some of the week's other activities included two Café Scientifique public events in Regina and Saskatoon. Outdoor billboards proclaiming the week were on display in Regina and Saskatoon, and a special supplement was produced once again in the *Saskatoon StarPhoenix* and *Regina Leader-Post*. This supplement featured stories on the latest work by researchers from the University of Regina and University of Saskatchewan. A supporting ad was also produced and ran on Global Television in Regina and Saskatoon.

Financial Overview

Report of Management

Management is responsible for the integrity of the financial information reported by the Saskatchewan Health Research Foundation.

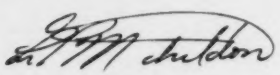
Fulfilling this responsibility requires the preparation and presentation of financial statements and other financial information in accordance with Canadian generally accepted accounting principles that are consistently applied, with any exceptions specifically described in the financial statements.

The accounting system used by the Foundation includes an appropriate system of internal controls to provide reasonable assurance that:

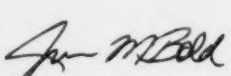
- transactions are authorized;
- the assets of the Foundation are protected from loss and unauthorized use; and
- the accounts are properly kept and financial reports are properly monitored to ensure reliable information is provided for preparation of financial statements and other financial information.

To ensure management meets its responsibilities for financial reporting and internal control, board members of the Foundation discuss audit and financial reporting matters with representatives of management at regular meetings. Foundation board members have also reviewed and approved the financial statements with representatives of management.

The Provincial Auditor of Saskatchewan has audited the Foundation's statement of financial position and statements of operations, change in net financial assets and cash flows. His responsibility is to express an opinion on the fairness of management's financial statements. The Auditor's report outlines the scope of his audit and his opinion.



Gregory P. Marchildon, PhD
Board Chair



June M. Bold, MSc
Chief Executive Officer

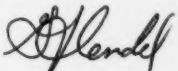
Auditor's Report

To the Members of the Legislative Assembly of Saskatchewan

I have audited the statement of financial position of the Saskatchewan Health Research Foundation as at March 31, 2009 and the statements of operations, change in net financial assets and cash flows for the year then ended. The Foundation's management is responsible for preparing these financial statements for Treasury Board's approval. My responsibility is to express an opinion on these financial statements based on my audit.

I conducted my audit in accordance with Canadian generally accepted auditing standards. Those standards require that I plan and perform an audit to obtain reasonable assurance whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation.

In my opinion, these financial statements present fairly, in all material respects, the financial position of the Saskatchewan Health Research Foundation as at March 31, 2009 and the results of its operations and its cash flows for the year then ended in accordance with Canadian generally accepted accounting principles.



Regina, Saskatchewan
May 6, 2009

Fred Wendel, CMA, CA
Provincial Auditor

Statement 1

SASKATCHEWAN HEALTH RESEARCH FOUNDATION
STATEMENT OF FINANCIAL POSITION
As at March 31

	2009	2008
		Restated (Note 13)
Financial assets		
Cash and cash equivalents (Schedule 2)	$ 672,390	$ 318,538
Accrued interest receivable	39,248	19,079
Accounts receivable	40,661	45,145
Short-term investments (Schedule 2)	2,426,754	1,153,836
Long-term investments (Schedule 2)	2,615,488	3,794,227
	5,794,541	5,330,825
Liabilities		
Deferred revenue (Note 7)	250,000	150,000
Accounts payable	46,393	7,539
Payroll liabilities	35,476	16,785
Grants payable	4,350,518	4,180,235
	4,682,387	4,354,559
Net financial assets	1,112,154	976,266
Non-financial assets		
Tangible capital assets (Note 3)	24,682	30,861
Prepaid expenses	20,344	21,373
	45,026	52,234
Accumulated surplus	$ 1,157,180	$ 1,028,500

Commitments (Schedule 3 and Notes 4 and 5)

(See accompanying notes to the financial statements)

SASKATCHEWAN HEALTH RESEARCH FOUNDATION
STATEMENT OF OPERATIONS
For the Year Ended March 31

	2009		2008
	Budget	Actual	Actual
	(Note 10)		Restated (Note 13)
Revenue			
General Revenue Fund			
Ministry of Health	$ 6,113,000	$ 6,113,000	$ 6,113,000
Ministry of Advanced Education, Employment and Labour	400,000	300,000	250,000
Partnership revenue	40,000	42,985	59,985
Interest	160,000	185,416	197,522
Recoveries	-	398,391	91,975
Donations	-	58	99
Miscellaneous	-	2,472	1,860
Total revenue	6,713,000	7,042,322	6,714,441
Expense			
Research funding			
Personnel awards	847,500	675,000	630,000
Research grants	2,963,312	3,055,341	2,916,245
Research centres (Note 5)	500,000	500,000	1,275,000
Partnerships (Note 5)	295,000	175,000	75,000
Matching grants (Note 6)	1,100,000	1,373,548	1,310,806
Program support	207,605	177,988	359,846
Dissemination and promotion	307,705	249,917	184,437
Evaluation and research	178,395	106,844	135,284
Leadership and management			
Board	39,500	21,171	29,165
Administrative	657,175	578,833	586,854
Total expenses (Schedule 1)	7,096,192	6,913,642	7,502,637
Annual surplus (deficit)	$ (383,192)	128,680	(788,196)
Accumulated surplus, beginning of year		1,028,500	1,816,696
Accumulated surplus, end of year		$ 1,157,180	$ 1,028,500

(See accompanying notes to the financial statements)

Statement 3

SASKATCHEWAN HEALTH RESEARCH FOUNDATION
STATEMENT OF CHANGE IN NET FINANCIAL ASSETS
For the Year Ended March 31

	2009	2008
		Restated (Note 13)
Annual surplus (deficit)	$ 128,680	$ (788,196)
Acquisition of tangible capital assets	(3,424)	(12,771)
Disposal of capital assets	-	1,654
Amortization of tangible capital assets	9,603	23,961
	6,179	12,844
Acquisiton of prepaid expense	(36,360)	(36,395)
Use of prepaid expense	37,389	24,524
	1,029	(11,871)
Increase (decrease) in net financial assets	135,888	(787,223)
Net financial assets, beginning of year	976,266	1,763,489
Net financial assets, end of year	$ 1,112,154	$ 976,266

(See accompanying notes to the financial statements)

Statement 4

SASKATCHEWAN HEALTH RESEARCH FOUNDATION
STATEMENT OF CASH FLOWS
For the Year Ended March 31

	2009	2008
		Restated (Note 13)
Operating transactions		
Annual surplus (deficit)	$ 128,680	$ (788,196)
Non-cash items included in annual surplus/(deficit):		
Amortization of tangible capital assets	9,603	23,961
Loss on disposal of capital assets	-	824
Bond discount amortization	(128,727)	(159,706)
Net change in non-cash working capital items:		
Accrued interest receivable	(20,169)	(13,402)
Accounts receivable	4,484	(36,839)
Prepaid expenses	1,029	(11,871)
Deferred revenue	100,000	150,000
Accounts payable	38,854	(10,400)
Payroll liabilities	18,691	16,785
Grants payable	170,283	1,246,941
Cash provided by operating transactions	322,728	418,097
Capital transactions		
Cash used to acquire tangible capital assets	(3,424)	(12,771)
Proceeds from disposal of capital assets	-	830
Cash applied to capital transactions	(3,424)	(11,941)
Investing transactions		
Purchase of investments	(1,786,097)	(2,332,551)
Proceeds from disposal and redemption of investments	1,820,645	1,402,921
Cash provided by (used by) investing transactions	34,548	(929,630)
Increase (decrease) in cash and cash equivalents	353,852	(523,474)
Cash and cash equivalents, beginning of year	318,538	842,012
Cash and cash equivalents, end of year	$ 672,390	$ 318,538

(See accompanying notes to the financial statements)

SASKATCHEWAN HEALTH RESEARCH FOUNDATION
NOTES TO THE FINANCIAL STATEMENTS
MARCH 31, 2009

1. Establishment of the Foundation

On January 31, 2003, *The Saskatchewan Health Research Foundation Act* (S.S. 2002, c.S-21.1) came into force establishing the Saskatchewan Health Research Foundation (Foundation). The Foundation is responsible for organizing, managing and allocating most provincial health research funding in Saskatchewan and for ensuring that supported research fits with the Province's health research priorities and leads to benefits for health and the health system in Saskatchewan. The Foundation is the lead agency on implementing the provincial *Health Research Strategy*.

2. Accounting Policies

Pursuant to standards established by the Public Sector Accounting Board (PSAB), the Foundation is classified as an other government organization. The Foundation uses generally accepted accounting principles applicable to government. The following accounting principles are considered to be significant.

a) Revenue

The Foundation's main revenue for operations is contributions from the Ministry of Health – General Revenue Fund with other revenue coming from partnerships, interest and miscellaneous revenue. Contributions are unrestricted and are recognized in the year received.

Restricted contributions from the Ministry of Advanced Education, Employment and Labour are used for the Canadian Institutes of Health Research (CIHR) Regional Partnership Program (RPP) (see note 6) and the CIHR Partnerships for Health System Improvement Program (PHSI) (see note 7). These contributions are recognized in the year expenses are incurred.

b) Measurement uncertainty

The preparation of financial statements in accordance with PSAB accounting principles requires the Foundation's management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of commitments at the date of the financial statements and the reported amounts of revenue and expenses during the period. Actual results could differ from those estimates.

c) Tangible capital assets

The recognition and measurement of tangible capital assets is based on their service potential. Purchases of furniture and office equipment over $250 and computer hardware and software over $500 are recorded at cost as a capital asset. Purchases below these amounts are expensed as incurred. Amortization is recorded on a straight-line basis as follows:

Furniture	10 years
Office Equipment	5 years
Computer Hardware and Software	3 years
Leasehold Improvements	length of lease

Normal maintenance and repairs are expensed as incurred.

d) Research grants and awards expense

Grants and awards expense is recorded when eligibility has been determined and the grant and or award has been authorized. Awarded funds are sent to the recipients' home

institution to manage and disburse. Funds not spent during the term of a research grant are treated as a recovery in the year that this is determined.

Internally administered awards

The Foundation holds annual funding competitions through which applications are adjudicated by experts based on excellence and relevance. Terms vary and are often multi-year. For multi-year grants and awards, the Foundation assesses eligibility and provides authorization on a yearly basis.

Externally administered awards

CIHR currently administers RPP, PHSI and other matching funds awards. For multi-year grants and awards, the Foundation records the full amount of the expense in the year that authorization for funding is received from CIHR.

e) Investments

Investments are valued at amortized cost.

f) Basis of accounting

The financial statements are prepared using the accrual basis of accounting.

3. Tangible Capital Assets

	Furniture and Equipment	Leasehold Improvements	2009 Totals	2008 Totals
Opening cost	$ 85,349	$ 37,726	$ 123,075	$ 124,127
Additions during the year	3,424	-	3,424	12,771
Disposals during the year	(12,380)	-	(12,380)	(13,823)
Closing cost	76,393	37,726	114,119	123,075
Opening accumulated amortization	54,488	37,726	92,214	80,422
Amortization for the year	9,603	-	9,603	23,961
Disposals during the year	(12,380)	-	(12,380)	(12,169)
Closing accumulated amortization	51,711	37,726	89,437	92,214
Net book value of tangible capital assets	$ 24,682	$ -	$ 24,682	$ 30,861

4. Lease Commitments

At March 31, 2009, the Foundation had the following lease commitments:

	2010	2011	2012	2013	2014
Office lease	$ 77,145	$ 77,145	$ 77,145	$ 35,358	$ -
Photocopier lease	3,817	3,817	3,181	-	-
Postage meter lease	926	926	926	926	154
	$ 81,888	$ 81,888	$ 81,252	$ 36,284	$ 154

5. Other Research Initiatives

In 2008-09, the Foundation completed its final year of core funding to one remaining research centre, the Indigenous Peoples Health Research Centre. This completes the transition from centre funding commitments transferred from the Ministry of Health and the Health Services Utilization and Research Commission to a competitive team program approach. Additionally, the Foundation periodically enters into funding partnerships, often spanning more than one year, to help achieve its goals and objectives (see Schedule 3).

6. Saskatchewan – Canadian Institutes of Health Research (CIHR) Regional Partnership Program (RPP)

In a partnership that started in 1999 and has been extended to 2010-11, the Foundation provides funds to match funding from the CIHR-RPP on a 1:1 basis to support Saskatchewan researchers and research projects. The Foundation also received $250,000 from the Ministry of Advanced Education, Employment and Labour (from the Innovation and Science Fund) for this program. Transactions of the program are described below.

		2009
Balance, beginning of year (adjusted by restatement)	$	(91,954)
Saskatchewan Health Research Foundation		700,000
Ministry of Advanced Education, Employment and Labour		250,000
Recoveries		159,943
Grants expensed during the year		(861,048)
Balance, end of year	$	156,941

7. Deferred Revenue

In both the current and the previous year, the Ministry of Advanced Education, Employment and Labour provided $150,000 to the Foundation from Saskatchewan's Innovation and Science Fund to administer matching funds for the CIHR – PHSI grant program.

	2009	2008
Opening balance	$ 150,000	$ -
Ministry of Advanced Education, Employment and Labour	150,000	150,000
Grants expensed during the year	(50,000)	-
Ending balance	$ 250,000	$ 150,000

8. Related Party Transactions

Included in these financial statements are transactions with various Saskatchewan Crown Corporations, ministries, agencies, boards and commissions related to the Foundation by virtue of common control by the Government of Saskatchewan, and non-Crown corporations and enterprises subject to joint control or significant influence by the Government of Saskatchewan (collectively referred to as "related parties").

Routine operating transactions with related parties are recorded at the standard rates charged by those organizations and are settled on normal trade terms. These transactions and amounts outstanding at year-end are as follows:

8. Related Party Transactions (cont'd)

	2009	2008 Restated
Recovery and miscellaneous revenue:		
Saskatchewan Cancer Agency	$ -	$ 6,871
University of Regina	93	57,211
University of Saskatchewan	399,588	29,303
Other	120	150
Research grant, administrative and occupancy expenses:		
Capital Pension Plan - employee benefits	29,786	29,014
Saskatchewan Association of Health Organizations	4,590	4,779
Saskatchewan Opportunities Corporation – Innovation Place	87,084	86,301
SaskTel	10,087	10,913
University of Regina	1,353,536	1,208,602
University of Saskatchewan	4,455,215	4,983,781
Other	1,876	4,930
Accounts payable	30,835	-
Grants payable	4,350,518	4,180,235
Accounts receivable	35,958	29,523

The Foundation pays Provincial Sales Tax to the Ministry of Finance on all its taxable purchases. Taxes paid are recorded as part of the cost of those purchases.

Other transactions with related parties and amounts due to or from them are described separately in these financial statements and the notes thereto.

9. Financial Instruments

The Foundation has the following financial instruments: accrued interest receivable, accounts receivable, investments, accounts payable, and grants payable. The following paragraphs disclose the significant aspects of these financial instruments. The Foundation has policies and procedures in place to mitigate the associated risks.

a) Significant terms and conditions

There are no significant terms and conditions associated with the financial instruments, other than investments, that may affect the amount, timing, and certainty of future cash flows. Significant terms and conditions for investments are described separately in these financial statements and the accompanying notes.

b) Interest rate risk

The Foundation is exposed to interest rate risk when the value of its financial instruments fluctuates due to changes in market interest rates. As the Foundation seldom disposes of investments prior to maturity, this risk is minimal.

The Foundation's receivables and payables are non-interest bearing. Due to the short-term nature of these, as well as cash and short-term investments, interest rate risk is minimal.

9. Financial Instruments (cont'd)

As market interest rates fluctuate the market value of long-term investments moves in the opposite direction. This risk will affect the price the Foundation could sell the investments for prior to maturity.

c) Credit risk

The Foundation is exposed to credit risk from potential non-payment of accounts receivable or investment income and principal.

Most of the Foundation's receivables are from the provincial government; therefore the credit risk is minimal.

The Foundation's investments consist of provincial and federal government bonds, promissory notes, treasury bills and bankers acceptances with large Canadian banks. Therefore, credit risk for investments and related accrued interest receivable is minimal.

d) Fair value

For the following financial instruments, the carrying amounts approximate fair value due to their immediate or short-term nature:

Accrued interest receivable
Accounts receivable
Short-term investments
Accounts payable
Grants payable

The fair value of long-term investments is $2,631,257 (2008 - $3,806,491). The fair value is considered to approximate quoted market values.

10. Budget

The operating budget was approved by the Foundation's Board on April 9, 2008.

11. Pension Plan

The Foundation is a participating employer in the Capital Pension Plan, a defined contribution pension plan. Eligible employees make monthly contributions of 6% of gross salary with the Foundation contributing 6.45% of gross salary. The Foundation's financial obligation is limited to making required contributions. During the year, the Foundation's total contributions were $29,786 (2008 - $29,014).

12. Comparative Information

Certain prior year amounts have been reclassified to conform with the current year's presentation.

13. Prior Period Adjustment

An internal review of the expense recognition treatments for grants and awards revealed that the Foundation was not in compliance with Canadian generally accepted accounting principles. The Foundation had been expensing certain grants and awards upon payment rather than upon approval by the Foundation. The Foundation has corrected this error retrospectively and the financial statements for the year ended March 31, 2008 have been restated. The following table illustrates the impact of these transactions on amounts previously reported, as at and for the year ended March 31, 2008.

13. Prior Period Adjustment (cont'd)

	Before Adjustment	After Adjustment	Change
			Increase (Decrease)
Accounts receivable	$ 16,061	$ 45,145	$ 29,084
Grants payable	594,731	4,180,235	3,585,504
Accumulated surplus, beginning of year	4,287,889	1,816,696	(2,471,193)
Accumulated surplus, end of year	4,584,920	1,028,500	(3,556,420)
Recoveries	75,726	91,975	16,249
Research funding			
Personnel awards	537,500	630,000	92,500
Research grants	2,173,789	2,916,245	742,456
Partnerships (Note 5)	155,000	75,000	(80,000)
Matching grants (Note 6)	964,286	1,310,806	346,520
Annual surplus (deficit)	297,031	(788,196)	(1,085,227)

Schedule 1

SASKATCHEWAN HEALTH RESEARCH FOUNDATION
SCHEDULE OF EXPENSES BY OBJECT
For the Year Ended March 31

	2009		2008
	Budget	Actual	Actual
	(Note 10)		Restated (Note 12 and 13)
Advertising and promotion	$ 124,070	$ 100,610	$ 72,655
Amortization	-	9,603	23,961
Board expenses	39,500	21,171	29,165
Employee benefits	125,010	102,255	102,513
Employee salaries	621,000	573,300	522,714
Grants and awards	5,705,812	5,778,889	6,207,051
Office expenses	58,600	60,049	82,676
Office space	100,600	87,084	81,524
Professional Fees	213,570	119,061	323,688
Publications	18,500	15,692	13,050
Review committee expenses	17,600	10,972	15,206
Travel and meetings	71,930	34,956	28,434
	$ 7,096,192	$ 6,913,642	$ 7,502,637

(See accompanying notes to the financial statements)

Schedule 2

SASKATCHEWAN HEALTH RESEARCH FOUNDATION
SCHEDULE OF INVESTMENTS
As at March 31, 2009

	MATURITY DATE	CARRYING VALUE	EFFECTIVE RATE
Cash and cash equivalents:			
Canadian Imperial Bank of Commerce		$ 203,539	
Government of Canada Treasury Bill	28-Apr-2009	468,851	0.200%
		672,390	
Short-term investments:			
Province of Saskatchewan	10-Apr-2009	226,042	3.250%
Province of Newfoundland	17-Apr-2009	508,109	4.120%
ICIC Bank GIC	9-Jul-2009	100,000	3.960%
Equitable Trust GIC	9-Jul-2009	100,000	3.850%
Pacific Western Bank GIC	9-Jul-2009	100,000	3.850%
AGT Trust GIC	9-Jul-2009	100,000	3.810%
Citizen's Bank Term Deposit	9-Jul-2009	34,132	3.750%
Province of Manitoba	5-Sep-2009	105,708	3.166%
Province of Ontario	19-Nov-2009	560,229	4.060%
Province of British Columbia	1-Dec-2009	359,740	4.190%
Province of Saskatchewan	18-Jan-2010	232,794	4.380%
		2,426,754	
Long-term investments:			
Ontario Hydro	11-Apr-2010	234,252	4.470%
Province of British Columbia	23-Aug-2010	226,215	3.570%
Maple Trust Company GIC	19-Nov-2010	100,000	4.750%
Montreal Trust Company GIC	19-Nov-2010	100,000	4.750%
Province of Ontario	2-Dec-2010	324,105	4.620%
Canadian Western Bank GIC	31-Mar-2011	100,000	2.350%
CIBC Full Service GIC	31-Mar-2011	100,000	2.330%
CIBC Morgages Inc GIC	31-Mar-2011	100,000	2.300%
CIBC Trust Corporation GIC	31-Mar-2011	100,000	2.300%
Manulife Bank of Canada GIC	31-Mar-2011	100,000	2.200%
National Trust Company GIC	31-Mar-2011	100,000	2.250%
Province of Ontario	2-Jun-2011	230,916	3.690%
National Bank of Canada GIC	12-Sep-2011	100,000	4.730%
Laurentian Bank of Canada GIC	12-Sep-2011	100,000	4.720%
Saskatchewan Savings Bond	15-Jul-2012	200,000	4.200%
HSBC Bank Canada GIC	6-Dec-2012	100,000	4.900%
Laurentian Bank of Canada GIC	6-Dec-2012	100,000	4.875%
Province of Manitoba Allocation Notes	27-Sep-2013	200,000	
		2,615,488	
		$ 5,714,632	

(See accompanying notes to the financial statements)

Schedule 3

SASKATCHEWAN HEALTH RESEARCH FOUNDATION
SCHEDULE OF RESEARCH FUNDING COMMITMENTS
As at March 31, 2009

The Research Funding commitments at March 31, 2009 were as follows:
(Note 2(d) and 5)

YEAR	PERSONNEL AWARDS	RESEARCH GRANTS	PARTNERSHIPS	TOTAL
2010	$ 315,000	$ 1,790,618	$ 75,000	$ 2,180,618
2011	-	995,799	-	995,799
2012	-	952,057	-	952,057
	$ 315,000	$ 3,738,474	$ 75,000	$ 4,128,474

(See accompanying notes to the financial statements)

Saskatchewan Health Research Foundation

PAYEE LIST

FISCAL YEAR APRIL 1, 2008 – MARCH 31, 2009

Personal Services

Listed are individuals who received payments for salaries, honoraria, and compensation for personal services.

Bold, June	$ 127,164
Briggs, Alexa	70,647
Odnokon, Patrick	67,149
Robin, Michael	70,017
	$ 334,977

Transfers

Listed are transfers that are committed to institutions to administer SHRF grants.

University of Saskatchewan	$ 3,963,596
University of Regina	1,264,573
	$ 5,228,169

Supplier Payments

Listed are payees who received payment for the provision of goods and services.

Innovation Place (SOCO)	$ 95,033
Synaptix	68,485
	$ 255,163

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